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FIFTEENTH ANNUAL REPORT

OF THE

General Railroad Commissioners

OF THE

STATE OF CONNECTICUT,

FOR 1868,

TOGETHER WITH THE

ANNUAL REPORT OF THE RAILROAD CORPORATIONS IN THIS STATE, FOR 1867.

TO WHICH ARE ADDED

The Leading Statistics Prepared by the Commissioners.

Printed by Order of the Legislature.

HARTFORD:
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1868.

REPORT.

To the Honorable, the General Assembly of the State of Connecticut, May Session, 1868:

The General Railroad Commissioners, in obedience to the requirements of the Statutes, respectfully beg leave to present their Fifteenth Annual Report, giving a history of their doings during the year, with the condition of the roads in operation, also the status of those which have been chartered within the last few years, and their present position, together with such recommendations as your commissioners deem necessary for the general good.

There is something marvelous in the development and progress of the railway system throughout the entire world. Their construction in this country, commenced under great difficulties, and by parties who had neither the experience or the opportunities to profit by the example of others. Yet the determination and energy which are the characteristics of our people, has nearly reached the acme of success. We were able to report in our last 36,896 miles of finished road in the United States, to which we now add 1709 miles, constructed the current year, making a total of 38,605 miles. The Union Pacific road alone, constructed 255 miles, laying a portion of the time the unprecedented length of three miles of rails in a single day. By its charter this road was not required by Congress to be completed to the Pacific Ocean until 1877. But the company now give assurances that it will be finished in 1870. Then the traveler can take his seat in a palace car in the city of New York, which will include the conveniences of a first class Hotel, and in seven days time be landed in San Francisco, a distance of about 3,370 miles. This progress we believe to be unparalleled in the annals of history. 11,395 additional miles of road are now under contract and being constructed in the United States. The entire number of miles of road opened for traffic throughout the world in 1866, amounted to 78,578 miles.

There has been but a few miles constructed in this State during the past year; doubtless, in a measure owing to the high price of labor and materials, which has delayed numerous projects in the business world, until a time should arise when they could be accomplished at materially reduced rates. It is to be presumed that this time is near at hand. Appearances indicate it, many kinds of materials are already showing depreciation, and contracts are being entered into to renew many enterprises which have long lain dormant.

Your Commissioners' time has been largely occupied during the year, one of their number has travelled during that time in the prosecution of his duties about 17,000 miles. Recent legislation, added to that of previous years, have largely added to their duties. They have now to decide upon numerous questions frequently arising between the companies and the public, and are gratified to be able to report that all which have come before them have been satisfactorily settled.

The general character of the roads embracing every department, have materially improved during the last three years. Your commissioners have been persistent in demanding this, and have been constant in suggesting and recommending the adoption of such improvements as they thought would add to the safety or convenience of passengers, and whenever a necessity has arisen, they have issued their order as the statutes require to enforce them. Several of the companies are now advantageously building their passenger and freight cars, and one, their locomotives. This we cannot but regard as a step forward. They have the advantages of using only the best of materials, and having the workmanship under the supervision of the superintendents; they have been enabled to place some of the best cars now used on the roads.

A good road bed is essential to secure the running of trains smoothly. A portion of the roads, have naturally a graveled soil, with such there is but little difficulty. But the larger proportion runs through vallies, low and swampy lands, where gravel can only be obtained by transporting it a long distance, frequently many miles. Instances have occurred where the road beds have been made with this natural material and loam. With such a structure, the effect through the Winter and Spring is to cause upheaving by frost, rendering the track rough and uneven, causing an oscillating motion to the cars, and giving discomfort to the traveller. The only remedy is by a liberal system of gravelling, and if made of sufficient depth, the frost will have but little effect upon it, thus enabling the trains to move smoothly during the entire year. We think this course should be adopted in all cases.

The year has been a fruitful one in disasters in many States of the Union. Serious collisions have occurred, trains have run out of regular time, off from misplaced switches, and by the breaking of rails, the upsetting and burning of cars, the loss of life has been fearful. We have the pleasure of reporting our State wholly exempt from such accidents, and not a single life has been lost from these causes.

An important device for the prevention of accidents, in the application of electricity, has been successfully made during the last year, to switches and draw-bridges, to which we have given some attention, and have been so favorably impressed with its importance, as to give it our certificate of approval. It is called, "Halls Patent Electric Railway Switch and draw-bridge signal." It has been used at Stamford depot, about one year, and about six months attached to the draw-bridge at Bridgeport. Immediately upon the opening of a switch or draw, a signal raises, and a bell rings an immediate and continuous alarm, until they are closed. We regard this invention of vital importance and aid, in preventing trains from running off of misplaced switches.

This invention has been endorsed by several scientific gentlemen.

The New Haven and Derby Railroad Company presented a petition to the commissioners, to lay out a portion of their road terminating in New Haven. After due notice given to all parties in interest, a hearing was given in New Haven, commencing on the 8th day of October, 1867. Considerable opposition was manifested by a portion of the citizens of New Haven, to the lay out asked for by the company, and it appearing that the survey of but one route had actually been made with instruments, your commissioners suggested that before a decision should be rendered upon the application, that other surveys ought to be made in order to ascertain if a more feasible route could be found that would be less destructive to property. This was acceded to by all parties, and the commissioners adjourned to meet when all should be ready. After receiving notice they again met, and after a second hearing of three days, when all who wished appeared, and were heard either in person or by counsel, and the merits of the various routes presented, a majority of your commissioners did not hesitate to accept the lay out upon the route originally asked for by the petitioners, believing it to be the most feasible one where they could have the necessary accommodations they would require, which could not have been obtained by the other routes, for the prosecution of their business.

The order was duly issued bearing date November 5th, 1867. The work has been placed under contract and the construction has commenced with the expectation of having it completed to Derby, the present season.

Bridges are numerous, and there are miles of piling. The largest portion of the former, and all of the latter are constructed of wood. They have consumed much time in their examination. Many of them have been in use several years, so long that the life of the timber is in danger of being destroyed. We have been stringent in their examination testing them with suitable instruments to ascertain their strength and safety. We have directed some to be rebuilt, others to be repaired. Suffice it to say that no accidents have happened on either, during the last three years, from their insufficiency.

They are often seriously mutilated, by persons carving their initials upon them which exposes them to the weather, allowing rains to penetrate the pores of the wood causing premature decay. We have witnessed many instances where new ones have been constructed and neatly painted, that they have almost immediately been injured in this manner. Near villages and factories, nearly all of them are used much to the annoyance of your commissioners for water closets. We recommend the passage of an act to prevent these nuisances.

Great inconvenience exists for the want of telegraph facilities at many of the passenger depots. An instance has occurred when a locomotive has been disabled in close proximity to a passenger station, for the want of a telegraph instrument, hundreds of passengers have been detained to their great inconvenience, until a messenger has been sent several miles for assistance. This ought not to be longer permitted. We recommend the passage of an act requiring a telegraph instrument to be placed in one ticket station in each town through which said railroad runs, where such an office is not now established, requiring a competent person to operate it during the usual business hours.

Your commissioners in their report of 1866, made mention of the advantages which in their opinion would arise in the introduction of steel rails and urged their adoption by the railroad companies. The opinions then expressed have been fully confirmed by actual experiment, wherever they have been laid, and where the traffic is almost constant, there is scarcely any perceptible wear upon them, and they now present nearly as good an appearance as when laid down.

We have passed through an unusually severe winter. The mercury in some localities has fallen as low as 30° below zero. Iron rails have broken ad libitum. The effect of frost, cold, or absence of heat on iron is to make it contract, a severe strain is produced, it is then easily broken by a blow. Many suppose that steel is more brittle than iron in cold weather.

This is a mistake. A steel rail is not liable to the same accident, it can be broken only with great difficulty. It will outlast many iron rails, hence it is really cheaper than iron, and there is no reason why it should not come into general use. We cannot learn of but four broken steel rails from these causes reported in the whole country, while hundreds of iron rails have broken on a single road.

EXTRACTS FROM OUR REPORT 1866.

" When we consider the immense saving to machinery and cars, in having the smooth surface to run over instead of battered iron, also a saving to the roads by using a rail not liable to break and cause accidents, involving in many instances valuable lives and many thousand dollars in a single year, and lastly the life of the steel rail, which requires no rerolling and relaying, the saving is so immense that it is difficult to see how any road can afford to use iron when steel can be had."

There has been laid in the State during the year, 6,400 tons of new and rerolled iron ; allowing it to average 60lbs. to the yard it would lay 68 miles of single track road. We have ever impressed upon the companies the necessity of keeping their iron in good condition, thereby not only rendering them less liable to accidents, but believing it to be more economical in every respect for the successful prosecution of their business.

"All passenger trains run upon any railroad in this State which crosses any stream or harbor by a drawbridge, or which intersects and crosses, or is intersected or crossed by any other railroad, shall be brought to a full stop, at a distance not less than two hundred feet, nor more than one thousand feet, from the draw in every such bridge, and the point of intersecting and crossing of such roads, &c."

We recommend that Section five hundred and thirty-eight of the Act, concerning Communities and Corporations be amended by striking out the word "*passenger*," also strike out "*one thousand feet*," and insert "*eight hundred feet*."

The last General Assembly granted the following charters, viz :—

NEW HAVEN, MIDDLETOWN AND WILLIMANTIC RAILROAD COMPANY.

" And said company is hereby authorized and empowered to locate, construct, maintain, complete and operate a single, double or treble railway or railroad, from some suitable point in the city of New Haven, through the towns of New Haven, North Haven, Wallingford, Durham, Middlefield, Middletown, Portland, Chatham, Marlborough, Hebron, Columbia, Lebanon, Colchester and Windham, to some suitable point in the village of Willimantic, &c."

RIDGEFIELD AND NEW YORK RAILROAD COMPANY.

" From some suitable point in the town of Ridgefield through said town of Ridgefield to the New York State line, &c."

NAUGATUCK RAILROAD COMPANY.

" Is hereby authorized and empowered to locate, construct and complete a single, double or treble track railroad or way, from some suitable point on their present railroad in the town of Derby * * * to their present depot grounds in the town of Bridgeport, &c."

NEW LONDON NORTHERN RAILROAD COMPANY.

" Be, and they are hereby authorized, under their charter and the statute laws of this state to construct a second track in connection with their present track, taking the necessary lands therefor, on the western side of the river Thames, from some point in the city of New London to some point in the city of Norwich."

NEW HAVEN AND NORTHAMPTON RAILROAD COMPANY.

" Reviving the right to construct a branch road from the village of Collinsville in the town of Canton, to the north line of the state and extended to the first day of July, A. D. 1870."

We cannot learn that any steps have been taken by any of the above corporations to perfect their organization.

The Boston, Hartford and Erie Railroad, was chartered in 1863. It has succeeded in obtaining charters and franchises from Boston to Fishkill, New York, where it crosses Hudson river by a ferry, where it forms a connexion with a branch of the New York and Erie Railroad at Newburg, securing communication with important western roads, and the coal fields of Pennsylvania. When completed, will prove to be of great importance to the central and eastern portions of our state, opening a pretty direct line to the west for passengers and freight; the coal interest alone being an important one.

There has been much delay in its construction, time having been required to negociate the capital and funds necessary for its completion. The officers now assure us that they have succeeded in perfecting their plans, that the amount they will require has been negociated for, and will be forthcoming when needed, and that the entire line has been placed under contract, and that the construction between Waterbury and Fishkill will be commenced the present season.

About 26 miles of the line laying between Willimantic and Mechanicsville, is now under vigorous prosecution. It is expected that it will be completed within eighteen months.

A portion of this 26 miles having been located by a former board of commissioners and the company not having complied with the statute in regard to such location, the present board of commissioners being unwilling to take doubtful responsibilities advised the company to make an application to locate, and relocate such portions as had already been located, of this entire line. In response to this recommendation a petition has recently been received for its location as suggested.

The classification of accidents fully develop the facts that over one-third of the entire number occur by persons walking or lying on the tracks. It is impossible to prevent it without legislation. For the third time we respectfully ask your honorable body to take it into consideration. Humanity requires the passage of an act that will prevent this reckless loss of life.

One brakeman has been killed during the year, (several in former years,) while passing through covered and over crossing bridges. On many of the roads they are compelled to ride upon the top of freight cars, and while they are performing their duties it cannot always be expected of them to be on their guard to avoid those whose roofs are not of sufficient height to clear them. We repeat the recommendation in our last report, requiring that all covered bridges in future shall be constructed not less than eighteen feet in height from the surface of the rail to the top cross beams. This will enable them to pass free from danger.

6,841,451½ passengers have been carried by the roads during the year, an increase over the previous one of 1,240,686. We regret to report that one of the number, one express messenger, and five laborers were killed by drowning, at the same time, in the Naugatuck river, owing to the destruction of a bridge by a freshet. But one more passenger was slightly, and one express messenger seriously injured during the year upon all of the roads in this state, except through their own acts of imprudence.

There has been expended for working the roads $5,994,432.30 against $5,420,976.24 last year; excess this year $573,456.06. For maintenance of way $1,448,284.24 against $1,378,806.49 last year; excess $69,477.75. Gross earnings $8,540,124.17; last year $8,026,939.05, excess this year $513,185.12.

Number of engines reported 201; passenger cars 252; merchandise cars 2,699; number of men employed 3,952.

We have prepared tables of abstracts giving all the items as fully as we could obtain them from the reports we have from the corporations, yet there are several omissions, as a portion of the companies do not open all the accounts required by the statutes in their ledgers.

We suggest that their returns would be more satisfactory to your honorable body if they were all rendered to the same date, for instance for the year ending December 31st. Then reliable and valuable statistics of entire uniformity would be obtained, while at present they vary several months.

In closing this portion of the report your commissioners are pleased to remark that they have ever been received by the officers of the companies with courtesy and kindness. They have been afforded all the aid and assistance required in the performance of their duties while their suggestions have generally been complied with.

CONDITION OF THE ROADS.

THE statutes require a semi-annual inspection of all the roads. Extract from

An Act relating to Railroads, passed May Session, 1867.

CHAPTER LXXXV.

"And that a thorough examination of the condition of the track, road bed, bridges and masonry of each of the railroads in this State may be made; it shall be, and is hereby made the duty of the Railroad Commissioners in each examination of the several railroads by them made, to pass over the same at a rate of speed not exceeding six miles per hour, and to stop at each culvert, bridge and piling, and make a personal examination of the same; and they shall examine the rails and ties at some point in each and every mile, and shall make such rules, and order such repairs as, upon such examinations, they shall deem the public good demands."

The Commissioners in their last inspections were governed by the above statute. They were accompanied usually by the superintendents and the statute rigidly observed, and report as follows:

NEW YORK AND NEW HAVEN,

Occupies an advantageous position to command most of the through traffic between New York, and the largest portion of New England. This with its local business which must necessarily increase yearly, renders it the most important road in the state. When we contrast its character three years since with the present condition of its road bed, iron, motive power, etc, we see the results of continued perseverence and energy in placing it among the first class roads in the country. During that time a large amount of gravelling has been done, bridges have been rebuilt, which with the iron which has been laid and its improved motive power, enables us to express the opinion that it now runs as smoothly as any. There has been 2,300 tons of iron laid during the year. Every bridge has been rigidly inspected, and all repairs which were found necessary have been made.

It is in contemplation to rebuild the burnt portion of Coscob bridge, but it is as yet undecided whether to rebuild it with wood or iron. The company are now running one of their new compartment coaches on their 8 A. M. morning express train to Boston, also one on their 2.05 P. M. express train from New Haven to New York. They cost about $13,000 each, and are constructed with every convenience for the comfort of passengers. They are warmed with Baker's Patent heating apparatus, which is constructed in such a manner that there cannot be any danger of the cars taking fire if overturned. This heater has also been placed in over twelve passenger cars and we are informed that before another winter it will be placed in all their passenger cars.

The company are now building ten first class passenger cars with raised roofs. They will be placed on the road before the first of June next. These roofs will be placed on all the cars now running as fast as they can be spared from the road. Two new locomotives have been added since January 1st, 1868, more will be added if needed.

It is intended to construct a double track through Bridgeport, diverging from the depot far enough to allow its platform to be widened six feet; to construct a double track bridge with an iron draw, across the harbor, and to remove the present freight depot, which will give an unobstructed view of the draw-bridge. These improvements are much needed and will prevent the delays of passenger trains which are now of daily occurrence.

Twenty acres of land have been purchased at New Haven, which is now being graded preparatory to erecting shops for the repairs of equipments, &c. These shops are greatly needed for the increasing business of the road, and will be constructed on a liberal scale of sufficient capacity for the building of new engines and cars.

The passenger depots at Stamford and Norwalk have been completed. They embrace every necessary accommodation. Your Commissioners have been persistent in endeavoring to have the company adopt the steel rail, and we are gratified to be informed that they have decided in future to make all renewals of track with them, and have ordered for the present year sufficient to lay about 30 miles of main track. These rails will be about one half inch higher than the iron rail, and will all be laid with Pratts Patent Splice.

The gross earnings of the road the last year $2,330,849.65, being an increase of $166,347.40 over the previous one, and the net earnings show an increase of $169,769.13. The dividends were 10 per cent.

HARTFORD AND NEW HAVEN,

A continuation of the trunk line from New York to Boston, via Springfield and Worcester, has been admirably and successfully managed. In passengers, income and net earnings its business has considerably increased, but in freight only to a slight extent. It has paid in dividends 14 per cent. The road bed and iron has been kept in good condition. In that respect it is surpassed by none in the state. There has been 1,200 tons of iron laid during the year. Its motive power is in good order. The culverts are mainly constructed with brick, and many of them are very much dilapidated. We have inspected them with the superintendent of the road, who at once acceded to the necessity of some being repaired and others rebuilt, and he immediately entered into a contract for the materials for their repair and renewals, which will be commenced early in the season, and rigidly prosecuted until the whole are completed.

The bridges are the best in the state. The iron one over the Connecticut river at Warehouse Point, mentioned in former reports maintains its character for permanence and stability.

The stone arch bridge, double track, over Farmington river at Windsor, mentioned in our last report being then in course of construction, has been completed.

Total length of bridge including the abutments,	458	feet.
Total height above foundations,	36½	“
Height from low water to under side of arches,	29	“
Width of bridge at piers and abutments,	30	“
Width of bridge between the piers,	28	“

It contains 7 arches of 54 feet clean span each; they are built on a radius of 32 feet, and rise 15 feet from the piers to the center. There is in the bridge 123,061¼ cubit feet of stone, and 73,791 cubit feet of gravel, weighing together 13,994 tons. There are in the foundations 926 piles of an average length of 27 feet.

The cost of the bridge including the foundations was about $60,000. To this is to be added the cost of building some 1,700 feet of new bank at the ends, the line of the road at that point having been changed.

This is probably the most substantial bridge in the country, and it is well worthy of the inspection of all who are interested in railroads. We take pleasure in adding that it was constructed throughout from the designs and plans of the indefatigable superintendent of the road, E. M. Reed, Esq., who gave it his personal attention, and at its completion found that his original estimates were correct in every particular.

One new commodious smoking and baggage car combined, has been placed upon the road, and one for each train is being constructed, and will be used as soon as finished.

NORWICH AND WORCESTER.

There is nothing new to report in regard to this company, except the erection of brick machine shops and buildings, at Norwich, which are of the best character. The road is in its usual good order, constant supervision being maintained in every department. It is among the number that has had to submit to decreased earnings the past year, the deficiency being $70,240.31.

PROVIDENCE, HARTFORD AND FISHKILL,

Is still operated by trustees. Its earnings slightly increased the last year while its expenditures exceeded the previous one by $111,772.98. A considerable portion of the iron is becoming quite worn and requires to be renewed, 500 tons was laid the last year. We have recommended that 1,000 tons be laid the present one. The superintendent and his assistant are faithful in the performance of their duties, and have promptly fulfilled our requirements.

NEW LONDON NORTHERN,

Has been operated its whole length 100 miles to Grouts. Its gross earnings exceeded the previous year by $54,362.36, while its net earnings were $3,466.68 less. There are more bridges on this road than any other in the state, and they are in very good condition. A portion of their iron needs to be renewed early in the season. We have recommended the company to lay not less than 600 tons of iron or steel the coming season. Only 200 tons were laid the past year. We have recommended the company to add a room for ladies, to their depot at Stafford Springs, believing the one now used entirely unfit for their occupancy.

HOUSATONIC,

Has been in operation 26 years, and we believe has never paid a dividend on its common, and only a portion of the time on its preferred stock. A little over one year ago a change was made in a portion of its officers. Since their induction they have devoted themselves energetically in prosecuting its business. They have added one passenger, and one milk train to the business, the latter will doubtless become an important one, as the valley of the Housatonic is fertile in the production of this article, which has never before had an outlet.

Our inspection in October was a rigid one, and we found numerous repairs necessary. The general character of their depots are bad. One at Merwin's Station, being nothing but a dilapidated freight car, utterly unfit for the use it is put to. We recommended increased accommodations at this place.

The platforms at the stations were generally poor. We have insisted that they shall be rebuilt. The stone arch bridge near Canaan depot, we regard as becoming unsafe. After repeated and thorough examinations, we recommended the company to have it rebuilt. After waiting a suitable time, and not receiving any assurances that our recommendation would be complied with, we issued an order as the statutes require, to rebuild the bridge and have it completed on or before the 30th day of September, A. D. 1868. We have also recommended the company to lay 500 tons of iron annually in future.

NAUGATUCK,

Lying entirely in this state, 57 miles in length, running through the valley of the Naugatuck, fertile in manufacturing villages and an enterprising people, has had a liberal patronage, although from a depression of the manufacturing interest the past year, it has fallen off in its receipts from the former one $20,391.43. A serious accident occurred on this road in consequence of a severe storm September 5th, 1867, by the carrying away of a bridge, and a loss of seven lives by drowning. A full report will be found in the list of accidents. Another accident occurred October 29th, caused by breaking of an axle of a locomotive, when two persons were injured. 450 tons of iron has been laid the past year. The bridges and piling are in good order, and we have the assurance of its officers that the road will be kept in good order. They are now grading at its junction with the New York and New Haven road preparatory for the running of trains direct to New Haven.

A commodious depot has been erected at Waterbury.

DANBURY AND NORWALK,

We are pleased to present a more favorable report of the condition of this road, than we could in our last. There has been laid during the year 400 tons of iron, 10,000 ties. A new bridge has been constructed at Norwalk, and important repairs made upon others. Also a liberal ballasting of the road bed which was much needed. Property has been purchased for the extension of depot grounds at Danbury and Bethel. Its equipments have been increased by one new locomotive and several flat cars, and its motive power is in good order.

The gross earnings have been slightly increased, and nearly all their net amount has been used in making these improvements. Their construction account (which we commend as worthy of emulation,) has been closed. We learn since they made their report, that they have paid a dividend of 5 per cent.

NEW HAVEN AND NORTHAMPTON,

Still operated by a lease to the New York and New Haven Railroad Company, between New Haven and Granby, which expires in 1869. The lessees are not desirous to expend in maintenance of way more than is actually necessary. Hence persistence is required to maintain the standard. This we have stringently insisted upon. 200 tons of iron was laid the last season, more will be required the present one. North of Granby, we found the joints of the rails badly battered and crushed. We directed immediate repairs, or to have new iron laid. An extension of eight miles of this road from Northampton to Williamsburgh, Mass., has just been completed and has commenced operations at a cost thus far of $245,937.11.

SHORE LINE RAILWAY,

Running 50 miles along the shore of Long Island Sound, from New Haven to New London, affords a pleasant route, via Stonington and Providence, to Boston. It receives a fair share of business. Its early history was pecuniarily, an unfortunate one, by falling into hands of trustees, from which it was purchased by the present company in 1865, at a great loss to the original stockholders. At that time it was in very poor condition, in its motive power, iron, broken chairs, rotten ties, much of its piling decayed, &c. Under its present management it has greatly improved, and is now in fair order, 400 tons of iron was laid the last season. We have recommended that 600 tons be laid the coming season in addition to any which may be taken up rerolled, and relaid. Its earnings varied but little from the previous year. Its dividend 3 per cent.

NEW YORK, PROVIDENCE AND BOSTON,

Commencing at Groton, via Stonington to Providence, sixty-two miles in length, of which only seventeen lays in this State. The connexion this company had with a line of steamers between Stonington and New York, was broken the last year, which seriously affected its gross earnings. They were $133,417.95 less than the previous year. Steamers are now plying on this line, which will undoubtedly enable the company to regain its business. The road is kept in a good state of repair.

ROCKVILLE,

But $4\frac{8}{10}$ miles in length, running from Rockville to Vernon depot, where it intersects the Providence, Hartford and Fishkill road. It commenced operations in 1863, and the traffic has not been severe. It is in good order and economically managed. Its earnings the past year has been slightly increased over the previous one. A dividend of 8 per cent. has been paid on its preferred stock.

NEW YORK, HOUSATONIC AND NORTHERN,

Has made small progress since making their last report. They have been engaged nearly two years in constructing that portion of their road between Danbury and Brookfield, a distance of about five miles. They have succeeded in laying the iron between those places but it is not yet ballasted. We have been unable to obtain from the company any data to judge of their prospects in future.

NEW CANAAN RAILROAD,

Chartered in 1866. Their lay out was accepted and approved by the commissioners, February 13th, 1867. It runs from New Canaan to Stamford, a distance of about eight miles, where it will have a connexion with the New York and New Haven Railroad. The grading is nearly completed. The iron has been purchased, and it is in contemplation to lay it as soon as the season will permit, and to have the road in operation at an early day.

BOSTON, HARTFORD AND ERIE,

Have for the first time presented a formal report, the same as reported to the legislature of Massachusetts, and it is now placed in these tables. There is as yet only about thirteen miles of road finished in this State. We are informed by its officers that they have succeeded in perfecting its financial arrangements, and have placed their entire line under contract. The portion of their road between Mechanicsville and Willimantic, is now under vigorous construction.

ABSTRACT OF APPENDED TABLES.

The chartered Capital of the several Railroads lying in this State, in whole or in part, as reported, is	$46,518,748.00
Of which there has been paid in,	37,107,047.38
Their amount of funded and floating debts, are	18,271,508.92
The total expenditure for working the roads, has been as reported by the different companies,	5,994,432.30
For fuel, oil, and waste,	696,724.15
For salaries, wages, &c., chargeable to passenger, freight, and miscellaneous expenses,	1,386,006.90
There has been expended during the year, for maintenance of way,	1,448,284.24
For maintenance of motive power and cars,	1,066,762.27
Making for repairs and renewals, a total cost of	2,515,046.51
The total income of the Railroads in this State during the past year, has been	8,540,124.17
Their net earnings have been	2,015,813.71
Passenger and other trains have run in all,	3,716,704$\frac{1}{4}$ miles.
Carrying,	6,841,451$\frac{1}{2}$ passengers.
Total length of road, as reported in the tables,	880$\frac{820}{5280}$ miles.
Within this State,	630$\frac{1849}{5280}$ miles.
Aggregate length of double tracks,	127 miles.
In actual progress of construction,	31 miles.

ACCIDENTS.

There has been a small increase over the previous year. All which have occurred have been investigated by the Commissioners personally, and are embraced in the following list extracted from the records. They have been classified. The whole number injured amount to 54:—fatal, 35; not fatal, 19. Whole number of passengers carried on all the roads in
the State during the last fifteen years, - 55,270,064½
Whole number of accidents from all causes, - 725
" " fatal, - - 400
" " not fatal, - - 325

But a small portion were passengers, their injuries were mostly received in walking on the tracks, jumping on or off from cars while in motion, at crossings, &c., &c.

March 28th, 1867. William H. Cornell, a brakeman on the Providence, Hartford and Fishkill Railroad, while making a flying switch, at South Windham, in attempting to apply the brake, the wheel slipped off the brake shaft, which threw him off the car upon the track. One pair of trucks passed over him, dislocating his hip joint. He recovered in a few days.

April 1st. ——— Murphy, an Irishman, was found dead on one of the tracks in the New Haven depot, at New Haven. It was supposed he was lying asleep on the track intoxicated, when some passing train ran over him.

April 12th. Mary Campbell, 35 years of age, who resided in Plainfield, attempted to get on a saloon car, attached to a freight train of the Norwich and Worcester railroad at Danielsonville depot. She waited until the train had commenced moving, was then cautioned not to persist in her attempt to get on board. She caught hold of the guard rail with her right hand, when she immediately swung round between the cars and fell upon the track, five cars passed over her, crushing her terribly. Killing her almost instantly. A coroners jury rendered a verdict " that her death was caused by her own carelessness."

April 29th. John Butler, was walking on the track of the New York and New Haven Railroad, about one and one half miles east of Westport depot. The 3.45 P. M. train from New York was passing up the road. The fireman saw him, notified the engineer, who blew for brakes. Butler turned round, looked at the engine, then stepped on the side of the track not far enough for the engine to clear him, as he was thrown down a bank and killed. It was impossible to stop the train in time after he was discovered before reaching him. An inquest was held. The jury acquitted the operatives of the road from censure.

May 1st. William Cooper, a colored man residing at New Haven, while walking on the track of the New York and New Haven Railroad, near their yard at New Haven, was run over by a switching engine, while backing down, and killed. Although warned he made no effort to escape. A coroner's jury " exonerated the employees of the company from all blame."

May 2d. Charles Dalton, conductor of a mixed freight and passenger train on the Providence, Hartford and Fishkill Railroad, in making a flying switch at Vernon depot, ascended a ladder attached to a freight car, the upper round becoming detached he was thrown upon the track, but succeeded in rolling off except his left hand, which was caught and broken.

May 5th. John Fagan, an Irishman in a state of intoxication, went on board of the Sunday night mail train, which left New Haven, for Hartford, at 8 o'clock P. M. He wished to stop at North Haven, at which station the train did not stop. At a short distance above he jumped off the train, and was seriously injured.

May 10th. Morris Rails, brakeman on the Naugatuck Railroad, in attempting to couple a freight car to an engine, at Beacon Falls depot, was caught between them and badly squeezed.

May 14th. Helen Cahill, a child 2½ years of age, while playing by the side of the track of the New Haven, Hartford and Springfield Railroad, one and one half miles below Wallingford, ran immediately in front of the engine of a freight train which was passing, which struck her, throwing her down a bank. She was seriously injured, and the only one to blame.

May 21st. Frank Grebber, a German, and a laboring man, standing on the platform of the passenger station at Bridgeport, a freight train of the Naugatuck Railroad was passing, he jumped on the rear platform of a car, to steal a ride across the harbor. He fell between the cars, the train passing over him. He was badly injured.

May 30th. David Henderson, of Greenwich, was walking on the track of the New York and New Haven Railroad, between Greenwich and Port Chester. A train was approaching on both tracks ; to avoid the one coming from New York, he stepped on the north track immediately in front of the down train, was run over, and soon died. Jury acquitted all in charge of the train from censure.

May 31st. John Dean, addicted to intoxication, went into the car house of the Housatonic Railroad at Bridgeport, and laid down to sleep. A train backed into the house to attach a car, after which the train started, a pair of trucks ran over him. He died in a few hours. No one knew he was in the house when the accident occurred.

June 1st. James Kane and John White, of East Hartford, were riding in a wagon in Manchester, came to "Williams Crossing," a passenger train of the Providence, Hartford and Fishkill Railroad, was approaching, the usual whistles for crossings were given, to which they paid no attention. As soon as the engineer passed through the cut, and came in sight of the crossing, seeing the persons making an effort to cross, he attempted to stop the train, but was unsuccessful. It ran over them killing Mr. Kane almost instantly, and Mr. White died in a few hours. All who witnessed the collision united in imputing no blame to the operatives of the road.

June 17th. A girl four to five years of age, daughter of Mr. Thomas Lynch, was playing on the track of the Shore Line Railway, between the junction and Fair Haven, was struck by the engine and thrown off. She was slightly injured.

June 27th. Michael Larragee, a brakeman on the Stonington and Providence Railroad, while carelessly walking on the track, at Groton station, was run over by cars detached from the engine, and so badly injured he died a few hours afterwards.

June 28th. John Moran, of Windsor Locks, in attempting to get on a downward passenger train, after it had started from the above station, missed his step, and fell between a car and the platform, and was dangerously injured, but finally recovered. The accident was caused by his neglecting to get on the train (as he had ample time,) before it moved.

July 1st. William Tuttle, of Fair Haven, walking on the track of the Shore Line Railway, near his own residence, a train was approaching from New London, as soon as the engineer saw him, he gave the alarm whistle. He stepped off the track but not far enough, and was struck, resulting in a broken arm, and bruised head.

July 2d. George A. Whittemore, of South Montague, a brakeman on the New London Northern Railroad, was instantly killed it was supposed by striking his head against the first bridge above Stafford station, as the train was passing through it. He was knocked off the train, and several cars passed over him.

July 6th. Charles Eddy, a child about four years old, attempted to pass in front of a New York and New Haven train, which was approaching the station at Southport. The train was running slowly with steam shut off; the boy was caught by the pilot of the engine, and thrown several feet receiving severe injuries, but recovered. The accident was unavoidable under the circumstances.

July 19th. Peter Hall, a brakeman on the Naugatuck Railroad, while uncoupling cars at Naugatuck station, lost his balance and fell off the rear end of a car, one of the trucks run over his legs bruising them badly, but breaking no bones.

July 30th. George Edward Fawcett, a child 26 months old was on the track of the New York and New Haven Railroad near Stamford station. It was on a down grade and on a curve, the train running fast. The engineer saw the child about 20 rods distant, made every effort to stop the train but was unsuccessful. The child was instantly killed.

August 11th. Willis Ayers, of Chester, was run over and killed by a freight train on the New Haven, Hartford and Springfield Railroad, at one o'clock this morning about one half mile below Meriden station. He was seen in Meriden a short time previously, and stated he was going to Yalesville.

August 19th. Nathaniel W. Murphy, was run over at midnight, near West Mystic station, on the Stonington and Providence Railroad. The train was stopped immediately. He was found dead. From the evidence it is doubtful in what manner he lost his life. There are circumstances which leads to the supposition that violent hands had been laid upon him before the train reached him; although a coroner's jury rendered a verdict, "that he came to his death by being accidentally run over by the railroad cars."

August 29th. Mr. Daniel Shea, of Boston, Mass., carelessly attempted to get on a train of cars after they had started at Manchester station, on the Providence, Hartford and Fishkill Railroad. He made a misstep, and fell between the platform and the cars, and was so badly crushed, he died soon afterwards. He was about 50 years of age.

September 5th. A serious accident occurred on the Naugatuck Railroad to a passenger train whereby the following named persons lost their lives by drowning.

Egbert Sperry, a passenger, lived in Wolcottville.

Lucius Skinner, Express Messenger, lived in Winsted.

James Bomberry, laborer on the road, Wolcottville.

Patrick Roach, returning home to Wolcottville.

John Softly, Michael Donohoe, John Canty, to their homes in Winsted.

A storm commenced about 6½ P. M. unexampled in the quantity of water which fell. The passenger train from Bridgeport en route to Winsted, reached the scene of accident, Branch Bridge, a short distance above Plymouth, at 7.50 P. M. The train was approaching the bridge with steam shut off at a speed of 10 to 12 miles an hour. The engineer —— saw that the rails were in line, continued his course. When he reached the center of the bridge felt it give and heard a timber crack, the next moment the train stopped, the tender fell into the stream and the baggage car also. One end of this car was used for smoking. There were sixteen persons in it, and seven of the number were drowned.

A rigid examination of all the witnesses that could throw any light upon the accident was had. The testimony has been placed on file, and the report of the Commissioners has been recorded. We find that the accident was caused by the great height and velocity of the stream, washing out the channel and lowering it from three to four feet, this permitted the trestle work which supported the bridge to be washed away. Owing to the depth of water, and the darkness of the night, it was not discovered. The weight of the train broke the stringers, after their supports were washed away. The bridge was new, having been erected within the year, and was of sufficient capacity to support any train which could be run upon the road.

Your commissioners immediately recommended the company to erect a Howe Truss Bridge at this place which has been done. This obviates the necessity of trestle works or piers.

Sept. 12th. Patrick Doolan, of Hartford, an employee of the Providence, Hartford, and Fishkill Railroad, was killed near Bolton, under the following circumstances. An extra train was out gathering up fencing materials, and old ties. It being about time for the passenger train from Providence to pass, the conductor ordered this extra train to back down to Andover station. The section man informed the conductor that track men were at work, and they might be run over as they had no notice to look out for this train to back down, he requested that a sharp whistle might be given as a notice. This information and request was not heeded. The train was started, and before it had backed one fourth of a mile around a curve, the section men were seen approaching on a hand car. It was too late to stop it, they jumped off. The hand car was struck by the backing train and demolished, the debris throwing the trucks of the flat car off the track, which caused the ties on it to bound, the effect being to throw Doolan off the train, causing his death in a few minutes. The conductor was immediately discharged.

Sept. 17th. Mr. Wm. A. Hotchkiss, a resident of Derby, started for New Haven. When the train reached West Haven Station, on the New York and New Haven Railroad, he left the train for some purpose. After it started he attempted to get on board, but missed his footing, was thrown against the platform, receiving such severe injuries, that he died soon after, being the result of his own imprudence.

Sept. 18th. Jerry Brand, six years old, deaf and dumb, stole a ride on the Providence, Hartford and Fishkill Railroad, from Baltic to Lovett's Station. He started to walk back, a train was approaching around a curve when he was first discovered, too late to stop it before it struck him. He was considerably injured but soon recovered.

Sep. 28th. Henrietta Stertzing, a German woman, was walking on the track of the Hartford, New Haven and Springfield Railroad, just below their shops in Hartford, with a bundle of wood on her head. She was run over by a gravel train backing up, and instantly killed. Every attempt was made to stop without success. A coroner's jury acquitted the company from censure.

Oct. 6th. John Canair, while walking on the track of the Danbury and Norwalk Railroad, a short distance above Bethel, was run over and killed by a milk train. Every effort was made to induce him to leave the track, but without avail. It was then too late to stop the train. A coroner's jury exonerated the company from censure.

Oct. 9th. Daniel Thurber, of Mendon, Massachusetts, 70 years of age, while passing from the freight to the passenger depot, across the track in Danielsonville, on the Norwich and Worcester Railroad, a freight train was approaching which had been cut in two parts, one portion of which struck Mr. Thurber, throwing him down, and injuring him so badly that he soon died. He was blind in one eye and deaf. A coroner's jury acquitted the company from censure.

Oct. 11th. Waterman Woodworth, of South Windham, was killed about one mile from that village, while lying on the track of the New London Northern Railroad, intoxicated. As he lay on a curve, he was not seen until the train had approached so near him that it was impossible to stop it in time to save him.

Oct. 29th. Mr. Julius C. Bailey, Adams Express Messenger, who resides in Waterbury, was dangerously injured, and Mr. A. H. Lane, of Burrville, a passenger, was slightly injured on the Naugatuck Railroad, by the breaking of an axle of a locomotive while crossing Inchliff Bridge. This caused the driving wheel to strike the floor timbers of the Bridge with great force, the second blow struck the trestle work attached to the north end of the bridge, broke it down, causing the baggage car to fall through. The forward end of this car was demolished by the timbers which were driven through it. Mr. Bailey's escape from instant death was miraculous. He subsequently recovered.

Oct. 31st. Cornelius Gunnee, an employee of the Providence, Hartford and Fishkill Railroad, while coupling cars in the freight house, in Hartford, in some manner fell so near the track that a locomotive ran over both arms rendering amputation necessary.

Nov. 2d. Miss Sarah L. Whittlesey, of Old Saybrook, an elderly lady, took passage on the Shore Line Railway at New Haven, on the 6.5 P. M. train for home. She requested that the conductor should assist her in leaving the train when it reached her destination. Upon its arrival, the conductor as usual helped the passengers to leave the train, but did not see Miss Whittlesey. He then looked in the car and saw she was making her egress from the rear, and supposed she had landed safe. He then went forward, ascertained that all was ready, swung his lantern to start. Immediately after it was in motion the alarm was given that she was getting off the car. The train was almost instantaneously stopped, but she had fallen, had been run over crushing her leg so badly that amputation was necessary. She died the next night. No one imputed censure to the operatives of the road.

Nov. 4th. John Gorman, a workman on a gravel train, on the Stonington and Providence Railroad, was thrown from a car attached to a train while backing. A cow jumping on the track within 20 feet of the car, the collision resulted in throwing several cars off the track and in killing him instantly. He resided in Stonington.

Nov. 21st. John Roberts, a colored man, while crossing the track of the New York and New Haven Railroad, at Bridgeport, near Division Street, was struck by an engine and so badly injured, that he died the same night. It being dark, he was not seen by any one until the accident occurred. A corner's jury did not impute censure upon the company.

Dec. 8th. Mr. Ephraim Merritt, of Danbury, was standing near the Freight House of the Danbury and Norwalk Railroad, at Danbury, attempted to get on a train while moving slowly, caught hold of the rod of a baggage car, his feet slipped, but holding on with his hands, he was caught between the car and freight platform, and seriously bruised. He recovered in about three weeks.

Dec. 31st. Mr. Fisk B. Vintres, while attempting to cross the track of the New Haven, Hartford and Springfield Railroad, just above Meriden Depot, in a horse and wagon, was struck by the morning train from Hartford. The box of the wagon was thrown off tossing him out, breaking a collar bone and inflicting a scalp wound. Being deaf he did not hear the alarm which had been given.

January 10th, 1868. Mr. A. B. Trowbridge, of New Canaan, was walking on the track of the New York and New Haven Railroad, at Bridgeport, intending to cross the harbor on the pile bridge. He saw a Naugatuck Railroad Passenger train slowly approaching, but supposed it to be a Housatonic train. He first stepped off the track, then upon it again, lastly between the track and freight platform. The engineer did not see him. The conductor discovered him, pulled the bell rope to stop the train, which was accomplished almost immediately, but not until he had been badly crushed, between the passenger cars and the freight platform, causing his death two hours afterwards, the consequence of his imprudence.

Feb. 1st. John Green, a boy about 17 years old, who resided in Franklin, jumped upon a freight train of the New London Northern Railroad, while it was passing Windham Depot, fell off the rear of the car, was run over by the train, and instantly killed.

Feb. 15th. Charles Crosby, a brakeman on an express freight train, on the Hartford, New Haven and Springfield Railroad, was thrown from a train in consequence of a broken rail, about one mile above Hartford, and badly sprained one ankle.

Feb. 24th. Mr. John G. Hart, of New Britain, and Mr. Frederick Frisbie, of Farmington, in a sleigh, attempted to cross the track of the Providence, Hartford and Fishkill Railroad, in the town of New Britain. It was snowing fast at the time, they were muffled round their necks, and probably did not hear the whistle of the approaching train, which ran over and resulted in killing both of them.

March 6th. Mr. William Hobby, and Leonard Sammis, of Darien, were returning home, walking on the track of the New York and New Haven Railroad, about ten o'clock in the evening. The eight o'clock, P. M. Express train was approaching from New York, they stepped upon the north track. The Boston Express train was coming down, the head light of the upward train obscured the vision of the engineer who did not perceive them, they were struck by the engine. Mr. Hobby was instantly killed, Mr. Sammis had both legs broken, one ankle dislocated, and internal injuries, rendering his recovery somewhat doubtful.

All of which is respectfully submitted.

WILLIAM A. CUMMINGS,
SAMUEL FITCH,
ALBERT AUSTIN,
General Railroad Commissioners.

CLASSIFICATION OF ACCIDENTS.

NAMES OF RAILROAD COMPANIES.	Children.	Passengers.	Employees.	At crossing.	Intoxicated.	Jumping on and off cars.	Walking or lying on track.	Coupling cars.	Injured by collisions.	Marking flying switches.	Drowning.	Express messengers.	At over crossing bridges.	Not fatal.	Fatal.	Whole number injured.
New York and New Haven, - - -	2	1				1	10							2	9	11
New Haven and Hartford, - - -	1	2	1	1	1	3	3							5	2	7
Norwich and Worcester, - - - -		1				1	1								2	2
Providence, Hartford and Fishkill, - -	1	1	4	4		1	1	1	1	2				4	6	10
New London Northern, - - - -			1			1	1	1					1		3	3
Housatonic, - - - - - -					1		1								1	1
Naugatuck, - - - - - - -		2	7			1		2	2		7	2		5	7	12
Danbury and Norwalk, - - - -						1	1							1	1	2
Shore Line Railway, - - - - -	1	1				1	2							2	1	3
New York, Providence and Boston, -			2				2		1						3	3
Total, - - - -	5	8	14	5	2	9	22	4	4	2	7	2	1	19	35	54

TABLE I.

ROADS.	Capital.	Capital paid in.	Funded and floating Debts.	Rate of interest paid.
New York and New Haven, . .	$6,000,000.00	$6,000,000.00	$1,347,678.34	6 per cent.
New Haven and Hartford, .	3,000,000.00	3,000,000.00	927,000.00	6 " "
Norwich and Worcester, . .	2,825,000.00	2,363,600.00	638,671.60	6 " "
Providence, Hartford and Fishkill,	4,500,000.00	2,037,939.38	2,055,500.00	7 " "
New London Northern, . .	895,000.00	895,000.00	732,000.00	7 " "
Housatonic, . . .	2,000,000.00	2,000,000.00	414,361.32	7 " "
Naugatuck, ...	2,000,000.00	1,436,600.00	196,000.00	7 " "
Danbury and Norwalk, . .	400,000.00	400,000.00	100,000.00	7 " "
New Haven and Northampton, .	1,334,000.00	1,334,000.00	792,166.73	7 " "
Shore Line Railway, . .	635,200.00	635,200.00	55,000.00	6 " "
New York, Providence and Boston,	1,754,548.00	1,754,548.00	600,000.00	6 " "
Rockville, . . .	100,000.00	97,500.00	57,500.00	7 1-2 " "
New Britain and Middletown, .	75,000 00	75,000 00		
New York, Housatonic and Northern,	1,000,000.00	193,660.00	29,224.14	7 " "
Boston, Hartford and Erie, . .	20,000,000.00	14,884,000.00	10,326,406.79	8 " "
Totals, . . .	$46,518,748.00	$37,107,047.38	$18,271,508.92	

TABLE II.

ROADS.	Length of Road.	Length in this State.	Length of double track.	In progress of construction.
New York and New Haven, . .	$62\frac{25}{100}$	$47\frac{25}{100}$	$62\frac{25}{100}$	
New Haven and Hartford, .	72	†66	$59\frac{6}{8}$	
Norwich and Worcester, . .	66	50	5	
Providence, Hartford and Fishkill,	$122\frac{365}{1000}$	96		
New London Northern, . .	100	57		
Housatonic, . . .	124	74		
Naugatuck, ...	57	57		
Danbury and Norwalk, . .	$23\frac{8}{10}$	$23\frac{8}{10}$		
New Haven and Northampton, .	‡93	$55\frac{13}{100}$		
Shore Line Railway, . .	50	50		
New York, Providence and Boston,	62	17		
Rockville, ...	$4\frac{8}{10}$	$4\frac{8}{10}$		
New Britain and Middletown, .	$3\frac{19}{100}$	$3\frac{13}{100}$		
New York, Housatonic and Northern,	$39\frac{75}{100}$	$16\frac{18}{100}$		about 5 miles.
Boston, Hartford and Erie, .	*	about 13§		" 26 "
Totals, . . .	$880\frac{820}{5280}$	$630\frac{1849}{5280}$	127	31

* Whole length of road in Massachusetts, Rhode Island, Connecticut and New York, is about 400 miles.

† Including Middletown Branch.

‡ Including branches.

§ Completed.

TABLE III.

ROADS.	When chartered.	Comm'ed operations.	Cost of road and equipment.	Cost of road and equipment per mile.
New York and New Haven, . .	1844	1848	$7,720,846.97	$124,029.67
New Haven and Hartford, .	1833	1838	3,486,598.51	48,424.97
Norwich and Worcester, . .	1832	1840	2,613,694.21	39,601.42
Providence, Hartford and Fishkill,	1836	1842	4,353,384.91	35,577.04
New London Northern, . .	1847	1849	1,486,492.78	14,864.92
Housatonic, . . .	1836	1842	2,105,558.52	16,980.31
Naugatuck, ...	1845	1849	1,690,395.45	29,656.06
Danbury and Norwalk, . .	1849	1852	427,281.85	17,952.73
New London and Northampton,* .	1846	1848	2,551,142.23	30,013.43
Shore Line Railway, . .	1848	1852	749,422.05	14,988.44
New York, Providence and Boston,	1832	1839	2,568,000.00	41,419.35
Rockville, ...	1857	1863	171,857.99	35,803.74
New York, Housatonic and Northern,	1863		†216,660.14	
Boston, Hartford and Erie, . .	1863		19,242,081.02	
Totals, . . .			$49,383,416.63	

* Including extension to Williamsburg, Massachusetts.

† Amount thus far expended.

TABLE IV.

ROADS.	Cost of fuel.	Cost of fuel per mile run.	Cost of oil and waste.	Cost of oil and waste per mile run.
New York and New Haven, . .	$94,892.99	$.13\frac{50}{100}$	$28,365.72	$.04\frac{03}{100}$
New Haven and Hartford, .	117,382.08	$.21\frac{42}{100}$	Included in fuel account.	Included in fuel account.
Norwich and Worcester, . .	57,034.66	$.15\frac{64}{100}$	6,697.76	$.01\frac{84}{100}$
Providence, Hartford and Fishkill,	67,305.51	$.18\frac{04}{100}$	9,875.05	$.02\frac{64}{100}$
New London Northern, . .	28,310.23	$.08\frac{76}{100}$	6,410.04	$.01\frac{98}{100}$
Housatonic, . . .	52,817.62	$.19\frac{66}{100}$	5,793.93	$.02\frac{15}{100}$
Naugatuck, ...	28,698.39	$.16\frac{28}{100}$	2,961.21	$.01\frac{63}{100}$
Danbury and Norwalk, . .	12,171.50	$.18\frac{82}{100}$	Included in fuel account.	Included in fuel account.
New London and Northampton, .	10,784.39	$.20\frac{55}{100}$	2,294.56	$.04\frac{37}{100}$
Shore Line Railway, . .	28,882.54	$.17\frac{47}{100}$	5,209.53	$.03\frac{15}{100}$
New York, Providence and Boston,	29,484.40	$.11\frac{54}{100}$	9,206.14	$.03\frac{61}{100}$
Rockville, ...	2,556.21	$.18\frac{81}{100}$	273.36	$.02\frac{01}{100}$
N. Haven & No. Hampton (leased part)	23,641.55	$.20\frac{93}{100}$	1,216.70	$.01\frac{16}{100}$
Boston, Hartford and Erie, . .	57,422.27	$.19\frac{29}{100}$	7,035.81	$.02\frac{36}{100}$
Totals, . . .	$611,384.34		$85,339.81	

TABLE V.

ROADS.	Repairs of roads exclusive of bridges.	Repairs of bridges.	Renewals of iron.	Total maintenance of way.
New York and New Haven,	$32,741.50	$25,207.24	$153,693.17	$239,357.38
New Haven and Hartford,	255,780.32	Included in repairs of roads.	Included in repairs of roads.	284,442.32
Norwich and Worcester,	78,017.71	449.70		91,789.67
Providence, Hartford and Fishkill,	139,077.60	16,428.06	Included in repairs of roads.	161,443.47
New London Northern,	57,071.84	6,486.95	Included in repairs of roads.	82,822.05
Housatonic,	81,455.27	Included in repairs of roads.	Included in repairs of roads.	103,215.31
Naugatuck,	84,068.05	Included in repairs of roads.	Included in repairs of roads.	84,068.05
Danbury and Norwalk,	48,277.28	6,012.63	Included in repairs of roads.	55,746.76
New Haven and Northampton,	33,340.52	309.19		39,725.05
Shore Line Railway,	20,175.49	4,389.96	24,402.76	55,387.85
New York, Providence and Boston,	81,860.17	12,896.18		94,756.35
Rockville,	2,199.99			2,199.99
N. Haven & Northampton, (leased part,)	33,544.60	3,404.69	21,250.00	62,904.11
Boston, Hartford and Erie,	70,760.60	5,937.15	Included in repairs of roads.	90,425.88
Totals,	$1,018,370.94	$81,521.75	$199,345.93	$1,448,284.24

TABLE VI.

ROADS.	For new locomotives.	For repairs of locomotives.	For repairs of passenger cars.	For repairs of merchandise cars.
New York and New Haven,	$92,884.02	$8,294.24	$105,150.29	$22,433.83
New Haven and Hartford,	Included in repairs.	113,232.04	40,682.37	72,712.13
Norwich and Worcester,	10,731.50	34,525.14	16,716.87	†66,024.94
Providence, Hartford and Fishkill,		134,929.96	Included in repairs of locomotives.	Included in repairs of locomotives.
New London and Northern,		22,158.45	9,537.61	13,553.10
Housatonic,	33,500.00	16,084.01	†13,811.86	†28,954.52
Naugatuck,		22,916.64	7,884.46	28,820.17
Danbury and Norwalk,		19,341.26	21,950.86	Included in passengers account.
New Haven and Northampton,		7,449.71	1,761.33	Included in passengers account.
Shore Line Railway,		18,590.70	18,240.82	Included in passengers account.
New York, Providence and Boston,		23,795.01	22,186.51	4,930.91
Rockville,		840.38	Included in locomotive account.	
N. Haven & Northampton, (leased part,)		*9,661.24	1,029.30	1,447,09
Totals,	$137,115.52	$431,817.78	$258,952.28	$238,876.69

*Rent of locomotives, $5,110.00.

†Including amounts paid for new passenger and merchandise cars.

TABLE VII.

ROADS.	Number of engines.	Number of passenger Cars.	Number of merchandise cars.	Number of men employed.
New York and New Haven, . .	37	85	421	771
New Haven and Hartford, .	29	29	477	721
Norwich and Worcester, . .	20	19	491	314
Providence, Hartford and Fishkill,	*20	24	299	410
New London Northern, . .	15	13	219	175
Housatonic, . . .	12	14	253	275
Naugatuck, ...	10	11	197	175
Danbury and Norwalk, . .	5	6	58	50
New Haven and Northampton, .	5	3	32	75
Shore Line Railway, . .	9	13	30	159
New York, Providence and Boston,	16	15	107	350
Rockville, ...	2	2	1	11
N. Haven & No. Hampton (leased part)	3	6	54	70
Boston, Hartford and Erie, . .	18	12	60	396
Totals, . . .	201	252	2,699	3,952

* Including one dummy.

TABLE VIII.

ROADS.	Salaries and incidental expenses chargeable to passenger department.	Salaries and incidental expenses chargeable to freight department.	Total amount for working roads.
New York and New Haven,	$231,211.69	$81,375.79	$1,284,722.69
New Haven and Hartford,	286,669.80	Included in passenger department.	1,141,337.70
Norwich and Worcester,	31,658.01	78,431.90	476,351.64
Providence, Hartford and Fishkill,	131,195.68	Included in passenger department.	643,662.31
New London Northern,	26,261.52	34,695.89	321,745.24
Housatonic,	30,107.05	52,204.07	493,122.53
Naugatuck,	18,341.93	49,670.20	323,451.17
Danbury and Norwalk,	19,941.53	Included in passenger department.	145,463.67
New Haven and Northampton,	28,234.74	do.	98,881.62
Shore Line Railway,	45,593.07	do.	234,814.69
New York, Providence and Boston,	93,035.13	do.	330,712.48
Rockville,	5,679.76	do.	21,480.69
N. Haven & No. Hampton (leased part)	47,885.81	do.	159,878.70
Boston, Hartford and Erie,	48,062.96	45,750.37	318,807.17
Totals,	$1,043,878.68	$342,128.22	$5,994,432.30

TABLE IX.

ROADS.	Number of miles run by passenger trains.	Number of miles run by freight trains.	Total miles run including other trains.
New York and New Haven, . . .	547,388	149,378	702,777
New Haven and Hartford, . . .	299,120	177,922	546,113
Norwich and Worcester, . . .	165,840	190,724	364,521
Providence, Hartford and Fishkill, . .	†265,463½	89,377½	373,153¼
New London Northern, . . .	194,467	82,865	323,221
Housatonic, ...	163,983	89,060	268,608
Naugatuck, ...	93,706	64,873	176,321
Danbury and Norwalk, ...	33,000	26,900	64,670
New Haven and Northampton, . .	18,761	28,702	52,463
Shore Line Railway, ...	No report.	No report.	165,280
New York, Providence and Boston, . .	ditto.	ditto.	255,401
Rockville, ...	13,585	*	13,585
New Haven and Northampton (leased part,) .	37,454	65,437	112,954
Boston, Hartford and Erie, . . .	191,891	83,782	297,637
Totals, ...			3,716,704¼

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* Passenger and freight cars mixed.

† Of which 92,480 mixed with freight.

TABLE X.

ROADS.	Whole number of passengers carried in the cars.	Number of passengers carried one mile.	Passengers carried to and from other roads one mile.
New York and New Haven,	1,965,371	66,584,648	28,132,578
New Haven and Hartford,	951,628	No report.	No report.
Norwich and Worcester,	336,836½	6,925,609	2,459,238
Providence, Hartford and Fishkill,	851,826	12,126,637	2,853,389
New London Northern,	310,995	5,270,673	No report.
Housatonic,	171,534	5,489,088	1,189,573
Naugatuck,	243,057	4,709,851	No report.
Danbury and Norwalk,	103,119	1,252,512	472,751
New Haven and Northampton,	54,393	606,162	203,002
Shore Line Railway,	224,796	No report.	No report.
New York, Providence and Boston,	440,081	ditto.	ditto.
Rockville,	48,546	242,730	86,477
New Haven and Northampton (leased part,)	148,043	No report.	No report.
New Britain and Middletown,	52,891	171,895	No report.
Boston, Hartford and Erie,	938,335	9,582,938	2,371,501
Totals,	6,841,451½		

TABLE XI.

ROADS.	Number of tons of Merchandise carried in the cars.	Number of tons carried one mile.	Number of tons carried to and from other roads.
New York and New Haven, - -	126,549	7,236,623	4,218,591
New Haven and Hartford, - -	354,240	No report.	No report.
Norwich and Worcester, - -	189,579	8,888,209	3,021,991
Providence, Hartford and Fishkill, -	182,894	4,604,037	2,316,293
New London Northern, - -	149,240	5,120,245	No report.
Housatonic, - - - - -	91,529	6,498,559	do.
Naugatuck, - - - - -	135,913	No report.	do.
Danbury and Norwalk, - - -	38,383	707,313	249,333
New Haven and Northampton, -	39,806	835,832	750,340
Shore Line Railway, - - -	No report.	No report.	No report.
New York, Providence and Boston,	60,567	do.	do.
Rockville, - - - - -	18,016	do.	do.
New Britain and Middletown, -	No report.	do.	do.
N. Haven & N. Hampton, (leased part,)	No report.	do.	do.
Boston, Hartford and Erie, - -	102,314	2,532,317	918,071

TABLE XII.

ROADS.	Gross Earnings.	Net Earnings.	Dividends.	Surplus not divided.
New York and New Haven, - -	$2,330,849.65	$733,843.42	10 per cent.	$133,843.42
New Haven and Hartford, . -	1,685,334.59	543,996.89	14 “	No report.
Norwich and Worcester, - -	680,437.86	173,674.99	8 “	244,774.82
Providence, Hartford and Fishkill, -	766,350.93	122,688.62		
New London Northern, - -	381,838.95	60,093.71	8 “ *	No report.
Housatonic, - - - - -	534,544.69	41,422.16	$4 per share on preferred stock.	
Naugatuck, - - - - -	473,635.04	150,183.87	10 per cent.	8,498.87
Danbury and Norwalk, - - -	156,755.63	11,291.96	No report.	9,622.97
New Haven and Northampton, -	82,195.23	†	2 per cent.	
Shore Line Railway, - - -	294,678.36	50,863.67	3 “	20,059.95
New York, Providence and Boston,	484,125.83	109,820.59	3 “	10,358.54
Rockville, - - - . -	30,414.52	8,933.83	‡8 “	None.
N. Haven & N. Hampton, (leased part)	269,385.79			
Boston, Hartford and Erie, - -	369,577.10			
Totals, - - - - -	$8,540,124.17	$2,015,813.71		

* On 750,000, first class stock.

† $16,686.39 expenditures over earnings, work north of Granby.

‡ On 29,000 preferred stock.

NEW YORK AND NEW HAVEN RAILROAD.

Return of the New York and New Haven Railroad, under the Act of 1853.

Capital Stock, - - . -	$6,000,000.00
Increase of Capital, since last Report,	1,000,000.00
Capital paid in, per last Report, -	3,982,614.33
Capital paid in, since last Report,	2,017,385.67
Total amount of Capital Stock paid in,	6,000,000.00
Funded debt, per last Report, -	2,000,000.00
Funded debt, paid since last Report,	908,000.00
Total present amount of funded debt,	1,092,000.00
Floating debt, per last Report, -	123,783.06
Floating debt, paid since last Report,	131,895.28
Total present amount of Floating debt,	*255,678.34
Total present amount of Funded and Floating debt, - - -	1,347,678.34
Average rate of interest, per annum, paid during the year, - - - -	6 per cent.

COST OF ROAD AND EQUIPMENTS.

For graduation and masonry, per last Report, - - -	$1,790,390.35
Total amount expended for graduation and masonry, - - -	1,790,390.35
For wooden bridges, per last Report,	262,685.92
Total amount expended for wooden bridges, - - -	262,685.92
For superstructure, including iron, per last Report, - - -	1,154,900.97
Total amount expended for superstructure including iron, - -	1,154,900.97

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* Cash on hand to apply on floating debt $244,132.57, besides balances due from agents and other Railroad Companies.

For stations, buildings and fixtures, per last Report, - - -	$447,254.35	
For stations, buildings and fixtures, paid during the past year, -	23,100.10	
Total amount expended for stations, buildings and fixtures, - -	470,354.34	
For land, land-damages and fences, per last Report, - - -	374,158.83	
For land, land-damages and fences, paid during the past year, - -	72,012.85	
Total amount expended for land, land-damages and fences, - -	446,171.68	
For locomotives per last Report, -	432,953.96	*29,667.83
For locomotives paid during the past year, - - - -	64,625.00	
Total amount expended for locomotives,	497,578.96	*17,400.95
For passenger and baggage cars, per last Report, - - -	264,462.56	
Total amount expended for passenger and baggage cars, - - -	264,462.56	
For merchandise cars, per last Report,	285,250.00	*33,550.00
For merchandise cars, paid during the past year, - - -	28,350.000	
Total amount expended for merchandise cars, - - -	323,600.00	
For engineering, per last Report, -	73,627.96	
Total amount expended for engineering,	73,627.96	
For agencies and other expenses, per last Report, - - -	2,264,917.25	
For agencies and other expenses, paid during the past year, - -	172,156.87	
Total amount expended for agencies and other expenses, - - -	2,437,074.12	
Total cost of road and equipments,	7,720,846.97	

CHARACTERISTICS OF ROAD.

Length of road, - - - -	$62\frac{25}{100}$ miles
Length of single main track, - - -	$62\frac{25}{100}$ "
Length of double main track, - - -	$62\frac{25}{100}$ "

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* Used on Canal Road, same as last year.

* For new depots at Norwalk and Stamford, less value of old depots removed.

Aggregate length of slidings, and other tracks, excepting main track and branches,	$1\frac{57}{100}$ miles.
Weight of rail, per yard, in main road,	64 pounds.
Maximum grade, with its length, in main road,	$46\frac{3}{10}$ feet, $\frac{775}{1000}$ miles.
Total rise and fall in main road,	1,646 feet.
Shortest radius of curvature, with length of curve, in main road,	573 feet, $\frac{57}{1000}$ miles.
Total degrees of curvature, in main road,	$2485\frac{12}{60}$
Total length of straight line, in main road,	$41\frac{63}{100}$ miles.
Aggregate length of wooden truss bridges,	3071 feet.
Aggregate length of iron bridges,	100 “
Number of public ways crossed at grade,	124
Way stations for express trains,	3
Way stations for accommodation trains,	19
Flag stations,	5
Whole number of way stations,	22
Whole number of flag stations,	5

DOINGS DURING THE YEAR.

Miles run by passenger trains,	547,388
Miles run by freight trains,	149,378
Miles run by other trains,	6,011
Total miles run,	702,777
Number of passengers carried in the cars,	1,965,371
Number of passengers carried one mile,	66,584,648
Number of tons of merchandise carried in the cars,	126,549
Number of tons of merchandise carried one mile,	7,236,623
Number of passengers carried one mile, to and from other roads,	28,132,578
Number of tons carried one mile, to and from other roads,	4,318,591
Rate of speed adopted for express passenger trains, including stops,	34 miles per hour.
Average rate of speed actually attained by express passenger trains, including stops and detentions,	29 “ “
Rate of speed adopted for accommodation trains,	28 “ “
Rate of speed actually attained by accommodation trains, including stops and detentions,	23 “ “
Average rate of speed adopted for freight trains, including stops and detentions,	12 “ “

Estimated weight in tons of passenger cars, (not including passengers hauled one mile,)	80,000,000
Estimated weight in tons of merchandise cars, (not including freight,) hauled one mile,	25,500,000

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, exclusive of wooden bridges, and renewals of iron,	$32,741.50	
Repairs of wooden bridges,	25,207.24	
For renewals of iron, including laying down,	153,693.17	
For wages of switchmen, average per month, $726.30,	Total, 26,561.97	
For wages of signal-men, average per month, $244.83,		
For wages of watchmen, average per month, $1,242.37,		
Number of men employed, exclusive of those engaged in construction,		771
For removing ice and snow, (this item to include all labor, tools, repairs, and extra steam-power used,)	926.48	
For repairs of fences, gates, houses for signal-men, gate-keepers, switchmen, tool houses,	227.02	
Total for maintenance of way,	239,357.38	
Loss and damage of goods and baggage,	1,102.69	included in "miscellaneous."
Damages for injuries to persons,	10,844.32	
Damages to property, including damages by fire,	4,604.52	
Damages for cattle killed on road,	160.00	

MOTIVE POWER AND CARS.

Repairs tools and machinery,	$8,294.24
For new locomotives to cover depreciation,	92,884.02
For repairs of passenger cars,	105,150.20
*For new passenger cars to cover depreciation,	
For repairs on merchandise cars,	22,433.83
*For new merchandise cars to cover depreciation,	

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*Depreciation more than covered by new cars charged to repairs of cars, made in Company's Shops.

Total for maintenance of motive power and cars, - - -	$228,762.38	
Number of engines, - - - - - -		37
Number of passenger cars, - - - - -		85
Number of baggage cars, - - - - -		21
Number of merchandise cars, - - - -		421
Number of gravel cars, - - - - -		none.

MISCELLANEOUS.

List of accidents to persons:

April 29, 1767. Between Westport and Southport, the 3.45 P. M. train from New York, killed a man, named Butler, who was walking on the track.

May 6, 1867. Between Rye and Mamaroneck, the 6. A. M. train from Norwalk, killed a man, named Crawford, who was walking on the track.

May 30, 1867. At Greenwich, the 5. P. M. train from New Haven, killed a man named Henderson, who was standing on the track.

July 6, 1867. At Southport, the 10. A. M. train from New Haven, struck a boy six years old, injuring him probably fatally.

July 30, 1867. At Stamford, the 3.25 P. M. train from Norwalk, killed a child named Fossett, who was walking on the track.

September 17, 1867. At West Haven, the 7. A. M. train from New Haven, ran over and killed a man named William A. Hotchkiss, while attempting to get on the train.

N. Y. & N. H. R. R. Co's Office,
January, 1868.

List of accidents to cattle and the amount paid for each:

May 14, killed an ox,	nothing paid.	included in "gratuities and damages."
June 12, " a cow, -	$60.00 "	
" 13, " 2 " -	100.00 "	
	$160.00 "	

Loss operating Canal Railroad, - - -		$31,525.28
For fuel used by engines during the year, viz:		
Wood, - - -	$10,755.44	
Coal, - - - -	84,137.55	
For oil used by cars and engines,	21,039.56	

For waste and other materials for cleaning,	$7,326.16	
For salaries, wages and incidental expenses, chargeable to passenger department,	231,211.69	
For salaries, wages and incidental expenses, chargeable to freight department,	81,375.79	
For gratuities and damages,	16,711.53	
For taxes and insurance,	127,813.95	
For internal revenue tax and tax on dividends,	73,099.51	
For repairs of station buildings, acqueducts, fixtures, furniture,	32,900.50	
For interest,		$97,200.00
*For amount paid other companies, in tolls for passengers, and freight carried on their roads, specifying each company,	72,192.05	
†For amount paid other companies, for the use of their roads, specifying each company,		183,558.26
For salaries of president, treasurer, superintendent, law expenses, office expenses of the officers and all other expenses not included in any of the foregoing items,	58,039.20	
Total expenditures for working the road,	1,284,722.69	
List of accidents to operatives and employees on the road, and the amount of damage, if any, paid to each case, naming each individual thus injured,		none.

INCOME DURING THE YEAR.

For passengers:—

On main road, including branches owned by Company,	$984,217.37

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*Harlem Railroad, haulage by horses.

†Harlem Railroad, their share of receipts.

To and from other roads, specifying what,[*]	$784,682.80
For Freight:—	
On main road, and branches owned by Company,	174,235.20
To and from connecting roads,	183,253.90
U. S. Mails,	25,100.00
Expresses, $175,559.44; extra baggage, $3,800.84,	179,360.28
Total income,	2,330,849.65
Net earnings, after deducting expenses,	[*]733,843.42

DIVIDENDS.

Ten per cent. total,	$600,000.00
Surplus not dividend,	133,843.42
Surplus last year,	895,343.02
[†]Total surplus,	1,029,186.44

ESTIMATED DEPRECIATION BEYOND THE RENEWALS, VIZ:

Roads and bridges,	Fully covered by renewals, and increased valuation.
Buildings,	
Engines and cars,	

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[*] "Danbury and Norwalk," "Housatonic," "Naugatuck," "New Haven and Northampton," "Hartford and New Haven," "Shore Line Railroad."

[†] Of this surplus nearly $500,000.00 has been spent for second track, bridges, &c.

[‡] Harlem Railroad, share of receipts, loss operating Canal Road and interest on funded debt.

HARTFORD AND NEW HAVEN RAILROAD.

Return of the Hartford and New Haven Railroad, under the Act of 1853, *year ending September* 1*st*, 1867.

Capital Stock,	$3,000,000.00	
Capital paid in, per last Report,	3,000,000.00	
Total amount of Capital Stock paid in,	3,000,000.00	
Funded debt, per last Report,	927,000.00	
Total present amount of funded debt,	927,000.00	
Average rate of interest, per annum, paid during the year,		6 per cent.

COST OF ROAD AND EQUIPMENT.

For graduation and masonry, per last Report,	*$2,604,284.86	
For graduation and masonry, paid during the past year,	†2,604,284.86	
Total amount expended for graduation and masonry,	‡265,027.66	
For wooden bridges, per last Report,	§265,027.66	
For wooden bridges, paid during the past year,	‖197,467.69	
Total amount expended for wooden bridges,	¶197,467.69	
Total amount expended for iron bridges, (if any,)	**27,682.66	
For superstructure, including iron, per last Report,	††27,682.55	

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*In Conn. last Report. †Same this year.

‡In Mass. last Report. §Same this year.

‖Middletown Branch last Report. ¶Same this year.

**Middletown Extension Road last Report. ††Same this year.

For land, per last Report, Conn., -	$35,031.11	
For land, paid during the last year, Conn.,	7,200.00	
For locomotives per last Report, -	94,000.00	*
Total for locomotives, - -	94,000.00	
For passenger and baggage cars, per last Report, - - - -	160,000.00	
Total for passenger and baggage cars,	160,000.00	
For engineering, per last Report, -		Transp. and Gen'l expense acc't.
For engineering, per last Report, -		
Total amount expended for engineering,		
For agencies and other expenses, per last Report, - - -		
For agencies and other expenses, paid during the past year, - -		
Total amount expended for agencies and other expenses, - - -		

CHARACTERISTICS OF ROAD.

Length of Road, - - -	$61\frac{3}{8}$ miles.
Length of single main track, -	$1\frac{5}{8}$ miles.
Length of double main track, -	$59\frac{6}{8}$ miles
Length of branches owned by the company, stating whether they have a single or double track, - -	†$10\frac{1}{4}$ miles.
Aggregage length of sidings, and other tracks, excepting main tracks and branches, - - -	$10\frac{7}{8}$ miles.
Weight of rail, per yard, in main road,	58 lbs.
Weight of rail, per yard, in branch roads,	55 lbs.
Specify the different weights per yard,	55 and 58 lbs.
Maximum grade, with its length, in main road, - - -	$38\frac{28}{100}$ 2,600 feet.
Maximum grade, with its length, in branch roads, - - -	$31\frac{68}{100}$ 1,500 feet.
Total rise and fall in main road, -	$721\frac{01}{100}$ feet.
Total rise and fall in branch roads, -	130 feet.
Shortest radius of curvature, with length of curve in main road, - -	444, 814 feet long.

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*New locomotives and cars are charged to the general expenses of the road.

†Middletown Branch and Extension, single track. Hartford Branch and Extension, single track.

Shortest radius of curvature, with length of curve, in branch roads,	513 feet.
Total degrees of curvature, in main road,	1,774 $\frac{25}{100}$ feet.
Total degrees of curvature, in branch roads,	478$\frac{10}{100}$ feet.
Total length of straight line, in main road,	36$\frac{94}{100}$ miles.
Total length of straight line, in branches,	5$\frac{7}{8}$ miles.
Aggregate length of wooden truss bridges,	477 feet.
Aggregate length of all other woooden bridges,	1,360 feet.
Aggregate length of iron bridges,	1524 feet.
Number of public ways crossed at grade,	75
Number of railroads crossed at grade,	2
Way stations for express trains,	4
Way stations for accommodation trains,	10
Flag stations,	4
Whole number of way stations,	13
Whole number of flag stations,	4

DOINGS DURING THE YEAR.

Miles run by passenger trains,	299,120
Miles run by freight trains,	177,922
Miles run by other trains,	69,078
Total miles run,	546,113
Number of passengers carried in the cars,	951,628
Number tons of merchandise carried in the cars,	354,240
Rate of speed adopted for express passenger trains, including stops,	33
Average rate of speed actually attained by express passenger trains, including stops and detentions,	33
Rate of speed adopted for accommodation trains,	27
Rate of speed actually attained by accommodation trains, including stops and detentions,	27
Average rate of speed adopted for freight trains, including stops and detentions,	12

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, exclusive of wooden bridges, and renewals of iron, - - -	$255,780.32	
For wages of switchmen, average per month, $42.50, - - -	Total 28,662.00	
For wages of gate-keeper, average per month, $40.00. - - -		
For wages of signal men, average per month, $37.50. - - -		
For wages of watchmen, average per month, $46.40, - - -		
Number of men employed, exclusive of those engaged in construction, -		721
Total for maintenance of way, -	284,442.32	
Loss and damage of goods and baggage, gratuities, &c., - - -		2,552.44

MOTIVE POWER AND CARS.

For repairs of locomotives, - -	$113,232.04	
For repairs of passenger cars, -	40,682.37	
For repairs on merchandise cars, -	*72,712.13	
Number of engines, - -		29
Number of passenger cars, - -		29
Number of baggage cars, - -		14
Number of merchandise cars, -		477
Number of gravel cars, - -		13
Tools and merchandise at repair shops,	8,751.49	

MISCELLANEOUS.

Sept. 8th, 1866, Thomas Reynolds of Meriden, struck by engine of Steam-boat train, $\frac{1}{4}$ mile south of Meriden station, instantly killed.

Sept. 30th, 1866, Martin Clark, Warehouse Point, walking on track between Thompsonville and Warehouse Point, struck by engine and killed.

Oct. 14th, 1866, Edward H. Kennedy, recently brakeman on this road, killed by falling or jumping from midnight train from Springfield.

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* Including new freight cars built at the shop.

Dec. 2d, 1866, Jerry Hurley, struck by engine of evening express train south, and killed—said to have been deaf.

Feb, 19th, 1867, John Peters, an employee of a lumber vessel, was killed by being caught between cars in New Haven yard, in attempting to pass between them.

May 5th, 1867, John Fagan, a brick maker, employed at North Haven, jumping from Sunday mail train, and severely, not fatally injured.

May 14th, 1867, A child named Cahill, killed ½ mile south of Wallingford station, by being struck by engine of a freight train.

May 13th, 1867, P. Kelly, an employee of this company, killed by train on "Bell Dock," New Haven.

Aug. 11th, 1867, Willis Ayers, of Meriden, struck by engine of New York and Boston Express freight train, ½ mile south of Meriden station, and killed instantly.

June 28th, 1867, John Moran of Windsor Locks, badly injured by falling between cars and platform in attempting to get upon the train when in motion. Has recovered.

Oct. 23d, 1866, George Latham, of Hartford, considerably bruised, being struck by engine of a freight train, about a mile south of Hartford station—said to have been intoxicated.

List of accidents to cattle and the amount paid for each:	
Sept., 1866, 1 steer killed on Middletown branch, $65.00, - -	
Oct., 1866, 1 cow near Hartford freight branch, $60.00, - - -	
July, 1867, 1 cow near Hayden station, $50,00, - - - -	$175.00
For fuel used by engines during the year, viz :	117,382.08
Wood, - - - -	
Coal, - - - -	
For oil used by cars and engines, -	
For waste and for other materials for cleaning, - - - -	*286,669.80
For salaries, wages and incidental expenses, chargeable to passenger and freight department, - -	
For gratuities and damages, -	

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* Transport and General Expense Account.

For taxes and insurance,	$114,208.99
For repairs of station buildings, acqueducts, fixtures, furniture,	62,786.95
For interest,	48,285.81
For salaries of president, treasurer, superintendent, law expenses, office expenses of the above officers, and all other expenses not included in any of the foregoing items,*	
Total expenditures for working the road, interest and taxes,	1,141,337.70

INCOME DURING THE YEAR.

For Passengers :—	
On main road, including branches owned by company,	941,536.18
For Freight :—	
To and from connecting roads,	625,992.72
Rents and Expresses,	117,805.69
Total income,	1,685,334.59
Net earnings, after deducting expenses, interest and taxes,	543,996.89

DIVIDENDS.

14 per cent. total,	420,000.00

HARTFORD, HARTFORD COUNTY, SS. }
Hartford, January 28, 1868. }

Then personally appeared W. P. Burrall, President, and made oath that the above report, by him subscribed, is true according to his best knowledge and belief.

Before me, URIAH CASE,
Justice of the Peace.

W. P. BURRALL, PRESIDENT.

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* Transportation and General Expense Account.

NEW BRITAIN AND MIDDLETOWN RAILROAD.

Return of the New Britain and Middletown Railroad, under the Act of 1853, *September* 1*st*, 1866, *to September* 1*st*, 1867.

Capital Stock, - - -	$75,000.00
Total amount of Capital Stock paid in,	75,000.00

COST OF ROADS AND EQUIPMENTS.

For graduation and masonry, per last Report,	$106,014.87
For graduation and masonry, paid during the past year, - - - - - -	
Total amount expended for graduation and masonry, - - - - - -	
For wooden bridges per last Report, -	
For wooden bridges, paid during the past year, - - - - - - -	
Total amount expended for wooden bridges,	
Total amount expended for iron bridges, (if any, - - - - - - - -	
For superstructure, including iron, per last Report, - - - - - - -	
For superstructure, including iron, paid during the past year, - - - - -	
Total amount expended for superstructure, including iron, - - - - -	
For stations, buildings and fixtures, per last Report, - - - - - - -	
For stations, buildings and fixtures, paid during the past year, - - - -	
Total amount expended for stations, buildings and fixtures, - - - - - -	

For land, land-damages per last Report,	$17,011.45
For land, land-damages paid during the past year,	624.11
For engineering, per last Report,	192.36
Engine house and turn table, per last rep't,	6,083.83

CHARACTERISTICS OF ROAD.

Length of road,	$3\frac{19}{100}$ miles.
Length of single main track,	$2\frac{47}{100}$ miles.
Aggregate length of sidings, and other tracks, excepting main track and branches,	2,000 feet.
Weight of rail, per yard, in main road,	57 pounds.
Maximum grade, with its length, in main road,	58 ft. per mile for 2 miles.
Total rise and fall in main road,	117½ feet.
Shortest radius of curvature, with length of curve, in main road,	radius $955\frac{4}{10}$ ft. 739 ft. long.
Total degrees of curvature, in main road,	116 deg. 10 min.
Total length of straight line in main road,	13,409 feet
Aggregate length of wooden truss bridges,	30 feet.
Number of public ways crossed at grades,	8 "
Number of railroads crossed at grades,	1 "

DOINGS DURING THE YEAR.

Number of passengers carried in the cars,	52,891
Number of passengers carried one mile,	171,895

W. P. BURRALL, President.

HARTFORD, HARTFORD COUNTY, SS.
January 28th, 1868.

Then personally appeared, William P. Burrall, President, and made oath that the above report, by him subscribed, is true according to his best knowledge and belief. Before me,

URIAH CASE,
Justice of the Peace.

NORWICH AND WORCESTER RAILROAD.

Return of the Norwich and Worcester Railroad, for the year ending November 30th 1867, *to the General Railroad Commissioners.*

Capital Stock,		$2,825,000.00
Number of shares of capital stock issued,	$23,636.00	
Capital paid in, per last Report,	2,363,600.00	
Total amount of capital stock paid in,		2,363,600.00
Funded debt, per last Report,	555,000.00	
Funded debt, increase of, since last Report,	74,500.00	
Total present amount of funded debt,	629,500.00	
Floating debt, per last Report,	6,112.58	
Floating debt, increase of, since last Report,	3,059.02	
Total present amount of floating debt,	9,171.60	
Total present amount of funded and floating debt,	638,671.60	
Average rate of interest per annum, paid during the year,	6 per cent.	
Maximum amount of debts during the year,	821,209.48	

COST OF ROAD AND EQUIPMENT.

For graduation and masonry, per last Report,	$614,529.92	
Total amount expended for graduation and masonry,		614,529.92
For wooden bridges, per last Report,	32,750.59	
Total amount expended for wooden bridges,		32,750.59

For superstructure, including iron, per last Report, - - -	$357,181.48	
Total amount expended for superstructure, including iron, - -		357,181.48
For stations, buildings and fixtures, per last Report, - - -	49,168.93	
Total amount expended for stations, buildings and fixtures, - -		49,168.93
For land, land-damages and fences, per last Report, - - -	142,591.71	
Total amount expended for land, land-damages and fences, - -		142,591.71
For locomotives, per last Report, -	75,540.44	
Total amount expended for locomotives,		75,540.44
For passenger and baggage cars, per last Report, - - -	31,524.88	
Total amount expended for passenger and baggage cars, - - -		31,524.88
For merchandise cars, per last Report,	42,646.92	
Total amount expended for merchandise cars, - - - -		42,646.25
For engineering, per last Report,	69,499.50½	
Total amount expended for engineering,		69,499.50½
For agencies and other expenses, per last Report, - - -	1,198,260.50½	
Total amount expended for agencies and other expenses, - - -		1,198,260.50½
Total cost of road and equipment, -		$2,613,694.21
Amount of assets or property held by the corporation in addition to the cost of the road, - - -	642,862.47	

CHARACTERISTICS OF ROAD.

Length of road, - - -	59 4/10 miles.
Length of single main track, -	59 4/10 miles.
Length of branches owned by the Company, stating whether they have a single or double track, - -	7 miles single.

Aggregate length of sidings, and other tracks, excepting main track and branches,	$9\frac{1}{3}$ miles.
Weight of rail, per yard, in main road,	56 and 60 lbs.
Weight of rail, per yard, in branch roads (specify the different weights per yard,)	56 and 60 lbs.
Maximum grade, with its length, in main road,	32 feet for 13,265 feet.
Total rise and fall in main road,	815 feet.
Shortest radius of curvature, with length of curve, in main road,	500 ft. radius 486 ft. long.
Shortest radius of curvature, with length of curve, in branch roads,	175 ft. radius 200 ft. long.
Total degrees of curvature in main road,	424° 30′.
Total length of straight line in main road,	33 miles.
Total length of straight line in branches,	$1\frac{6}{10}$ miles.
Aggregate length of wooden truss bridges,	1309 feet.
Aggregate length of all other wooden bridges,	548 feet.
Aggregate length of iron bridges,	none.
Whole length of road unfenced on both sides,	fenced by abuttors.
Number of public ways crossed at grade,	74
Number of railroads crossed at grade,	3, Western, P., H. & F. B., H. & Erie.
Way stations for express trains,	3
Way stations for accommodation trains,	18
Flag stations,	2
Whole number of way stations,	18
Whole number of flag stations,	2

DOINGS DURING THE YEAR.

Miles run by passenger trains,	165,840
Miles run by freight trains,	190,724
Miles run by other trains,	7,967
Total miles run,	364,521
Number of passengers carried in the cars,	$336,836\frac{1}{2}$
Number of passengers carried one mile,	6,925,609

Number of tons of merchandise carried in the cars, - - -	189,579
Number of tons of merchandise carried one mile, - - -	8,888,209
Number of passengers carried one mile to and from other roads, - -	2,459,238
Number of tons carried one mile to and from other roads, - - -	3,021,991
Rate of speed adopted for express passenger trains, including stops, -	30 miles.
Average rate of speed actually attained by express passenger trains, including stops and detentions, - -	30 miles.
Rate of speed adopted for accommodation trains, - - -	20 miles.
Rate of speed actually attained by accommodation trains, including stops and detentions, - - -	25 miles.
Average rate of speed adopted for freight trains, including stops, - -	8 miles.
Estimated weight, in tons, of passenger cars (not including passengers) hauled one mile, - - - -	7,567.667
Estimated weight, in tons, of merchandise cars, (not including freight,) hauled one mile, - - - -	13,332,313

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, exclusive of wooden bridges and renewals of iron, - - -	$78,017.71
For repairs of wooden bridges, -	449.70
For wages of switchmen, average per month, $282.64, - - -	9,903.95
For wages of gate-keepers, average per month, $37.89, - - -	
For wages of signal-men, average per month, $174.00, - - -	
For wages of watchmen, average per month, $330.78, - -	
Number of men employed exclusive of those engaged in construction, -	314.00

For removing ice and snow (this item to include all labor, tools, repairs, and extra steam-power used),	$3,413.21	
For repairs of fences, gates, houses for signal-men, gate-keepers, switchmen, tool-houses,	5.10	
Total for maintenance of way,		91,789.67

MOTIVE POWER AND CARS.

For repairs of locomotives,	$34,525.14	
For new locomotives, to cover depreciation,	10,731.50	
For repairs of passenger cars,	7,518.72	
For new passenger cars, to cover depreciation,	9,198.15	
For repairs of merchandise cars,	28,863.92	
For new merchandise cars to cover depreciation,	37,161.02	
For repairs of gravel and other cars,	116.00	
Total for maintenance of motive power and cars,		128,114.45
Number of engines,		20
Number of passenger cars,		19
Number of baggage cars,		none.
Number of merchandise cars,		491
Number of gravel cars,		none.

MISCELLANEOUS.

Casualties reported by Supt. for Twelve months, ending Nov. 30th, 1867.

March 2d, 1867, James Olmstead, brakeman on express freight train, was killed this morning by coming in contact with Jewett City bridge.

April 12th, 1867, Mary Campbell, of Fairfield, was killed by down way freight at Danielsonville this noon. She attempted to get on the cars after they had started, fell and badly cut to pieces.

July 12th, 1867, A man in the employ of Sweetser & Walker, Worcester, in attempting to turn from the track at "King's Crossng," South Worcester, upset his ice cart against the second car on

4.00 P. M. passenger train down. Car was considerably damaged on its side, and the man was badly hurt, by being dragged by the horse with the forewheels of the cart.

Oct. 9th, 1867, way freight up, ran over and killed a man named Daniel Thurber, of Meriden, Mass. He was crossing the track north of the highway, where the train came along in two parts, the leading part having passed and he being deaf, and blind of one eye, did not see or hear the following portion, which struck him as he stepped on the rail, knocked him down, run over and killed him instantly.

For fuel used by engines during the year, viz:—		
Wood, number of cords,—cost of the same,	$35,489.29	
Coal, number of tons (reckoning 2,240 lbs. to the ton,)—cost of same,	21,545.37	
For oil used by cars and engines,	5,443.23	
For waste and other material for cleaning,	1,254.53	
For salaries, wages, and incidental expenses chargeable to passenger department,	31,658.01	
For salaries, wages, and incidental expenses chargeable to freight department,	78,431.90	
For gratuities and damages,	3,534.56	
For taxes and insurance,	37,088.67	
For repairs of station buildings, acqueducts, fixtures, furniture,	7,655.16	
For salaries of president, treasurer, superintendent, law expenses, office expenses of the above officers, and all other expenses not included in any of the foregoing items,	34,346.80	
Total miscellaneous,		256,447.52
Total expenditures for working the road,		476,351.64
Total amount of interest paid during the year,		30,411.23
Total expenses and interest,		$506,762.87

INCOME DURING THE YEAR.

For Passengers :—		
On main road, including branches owned by company,	$186,482.69	
To and from other roads, specifying what, Boston & Wor., Wor. & Nashua, and Providence, Hartford and Fishkill,	66,477.52—	252,960.21
For Freight :—		
On main road and branches owned by company,	267,815.46	
To and from other connecting roads, Boston & Wor., Wor. & Nashua,	141,628.48—	409,442.94
United States Mails,	8,030.50	
Rents, $780.00 other income, $\$9{,}223\frac{21}{100}$	10,003.21—	18,033.71
Total income,		680,437.86
Net earnings after deducting expenses and interest,		173,674.99

DIVIDENDS.

8 per cent. Total dividends, $188,320 ; U. S. Taxes, $9,914.30 ; Bad Debts, $11.91,	198,246.21
Surplus not divided,	244,774.82
Surplus last year,	173,674.99
Total surplus,	220,203.60

MORTGAGE DEBTS.

Amount of debts secured by mortgage of road and franchise, or any property of the Corporation, per last Report,	$555,000.00	
Increase of mortgage-debt since last Report,	74,500.00	
Present amount of mortgage-debts,	629,500.00	
Number of mortgages on road and franchise, or any property of the Corporation,		three.

All of which is respectfully submitted, with the Report of the Commissioners of the Commonwealth of Massachusetts and the State of Connecticut, as required by law.

A. BREWSTER,
J. F. SLATER,
JNO. T. WAIT,
MOSES PIERCE,
FRANKLIN NICHOLS,
CHARLES JOHNSON,
Directors.

STATE OF CONNECTICUT, NEW LONDON COUNTY, SS.
NORWICH, January 2d, 1868.

n and there personally appeared, Augustus Brewster, John F. Slater, Jno. T. Wait, Moses Pierce, Franklin Nichols and Charles Johnson, who signed the above and made oath to the truth of the same, according to their best knowledge and belief, before me,

GEORGE C. RIPLEY,
Commissioner of the Superior Court.

HARTFORD, PROVIDENCE AND FISHKILL RAILROAD.

Return of the Trustees of the Hartford, Providence and Fishkill Railroad, under the Act of 1853, *from Feb.* 1*st*, 1867 *to Feb.* 1*st*, 1868.

Capital Stock, - - -	$4,500,000.00
Total amount of Capital Stock paid in,	2,037,939.38
Total present amount of funded and floating debt, - - -	*2,055,500.00
Average rate of interest, per annum, paid during the year,	7 per cent. on 2,055,500.00

COST OF ROAD AND EQUIPMENT.

Total cost of road and equipments,	4,353,384.91

CHARACTERISTICS OF ROAD.

Length of road, (Conn. 96.04 miles, R. I. 26.32 miles,)	$122\frac{365}{1000}$ miles,
Length of single main track, - - -	$117\frac{365}{1000}$ miles.
Length of main track used with Hartford and New Haven Railroad, as double track, - -	5 miles.
Length of branches owned by the Company, single track, Dorrance street, freight track, - -	$0\frac{811}{1000}$ miles.
Aggregate length of sidings, and other tracks, excepting main track and branches, - - -	$13\frac{1144}{5280}$ miles.
Specifying the different weights per yard,	58, 59½, 61½, 52½ and 67½ lbs.
Maximum grade, with its length, in main road, - - -	60 ft. per mile for $3\frac{86}{100}$ miles.

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* There is a sinking fund deposited with the Treasurers of the cities of Hartford and Providence, towards providing for the payment of the Company's Bonds, amounting to $981,000 maturing in 1876, now held by said cities. This fund January 1st, 1868, amounted to $109,835.22 in Hartford, and $71,880.40 in Providence, May 1st, 1866. The above are the latest reports received.

Total rise and fall in main road,	3,315$\frac{65}{100}$ feet.
Shortest radius of curvature, with length of curve, in main road,	604 feet for 4,990 feet.
Total degrees of curvature, in main road,	7,483$\frac{67}{100}$ feet.
Total length of straight line, in main road,	66$\frac{5}{10}$ miles.
Aggregate length of wooden truss bridges,	5,703 feet.
Aggregate length of all other wooden bridges,	5,733 feet.
Number of public ways crossed at grade,	132
Number of railroads crossed at grade,	4 { N. & W. N. L. N. H. & N. H. N. H. & N.
Way stations for accommodation trains,	41
Flag stations,	18
Whole number of way stations,	41
Whole number of flag stations,	18

DOINGS DURING THE YEAR.

Miles run by passenger trains and mixed, passengers, 172,983½, mixed 92,480,	265,463½
Miles run by freight trains,	89,377½
Miles run by other trains,	18,312¼
Total miles run,	373,153¼
Number of passengers carried in the cars,	851,826
Number of passengers carried one mile,	12,126,637
Number of tons of merchandise carried in the cars,	182,894
Number of tons of merchandise carried one mile,	4,604,037
Number of passengers carried one mile, to and from other roads,	2,853,389
Number of tons carried one mile, to and from other roads,	2,316,293

Rate of speed adopted for accommodation trains and mixed,	mile per hour,	22 & 15 miles.
Rate of speed actually attained by accommodation and mixed trains, including stops and detentions,		22 & 15 miles.
Average rate of speed adopted for freight trains, including stops and detentions,		10 to 12 miles.

Estimated weight in tons of passenger cars, (not including passengers) hauled one mile,	9,273,340
Estimated weight in tons of merchandise cars, (not including freight,) hauled one mile,	9,900,000

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, (exclusive of wooden bridges,) and 500 tons new iron, - - - -	$139,077.60	
Repairs of bridges, - - -	16,428.06	
For wages of switchmen, average per month,	43.00	
For wages of gate-keeper, average per month,	43.00	
For wages of signal-men, average per month,	43.00	
For wages of watchmen, average per month,	50.00	
Number of men employed, exclusive of those engaged in construction, - - - -		410
For repairs of fences, gates, &c., -	5,937.81	
Total for maintenance of way, &c.,	161,443.47	

MOTIVE POWER AND CARS.

For repairs of locomotives and cars including new, - - -	134,929.96	
Number of engines including 1 dummy,		20
Number of passenger cars, - -		24
Number of baggage cars, - - .		15
Number of merchandise 239 eight wheels, and 60 4 wheels, - -		299
Number of gravel cars, small 4 wheels,		25
Number of hand cars, - -		23

MISCELLANEOUS.

List of accidents to persons other than employees.

June 1st, John White and James Kane, killed at crossing near Bucklands.

Aug. 29th, Daniel Shea, killed trying to get on to moving train at Manchester.

Sept. 12th, Patrick Doolan, killed by jumping from moving train near Bolton.

Nov. 4th, Martin Hunt, killed crossing track in Rhode Island.

Dec. 25th, John Comiskey, killed walking on track in Rhode Island.

Sept. 17th, boy named Brandhurst, "catching a ride," near Baltic, (not serious.)

Sept. 30th, boy named Mattison, jumped from moving train in Rhode Island and broke his arm.

For fuel used by engine during the year, viz:

Wood, - - -	$59,554.55
Coal, - - - -	7,750.96
For oil used by cars and engines,	7,737.37
For waste and other materials for cleaning, - - - -	2,137.68
For salaries and wages, - -	131,195.68
For gratuities and damages, rents, &c.,	11,073.90
For taxes and insurance, - -	35,913.48
For printing and stationery, -	5,969.36
For repairs of station buildings, acqueducts, fixtures, furniture, - -	85,955.90
Total expenditures for working the road,	643,662.31

List of accidents to operatives and employees on the road.

March 28th, W. H. Cornell, hip dislocated while switching at South Windham.

May 2d, Charles Dalton, hand crushed while switching at Vernon.

June 29th, D. H. Freeman, leg broken, stepping from train at Washington, R. I.

Oct. 31st, Con Guinness, arm and hand crushed, falling on track at Hartford.

INCOME DURING THE YEAR.

For Passengers:	
On main road, - - -	413,118.48
For Freight:	
On main road, - - -	316,620.14
U. S. Mail, - - - -	12,249.99
Rents, - - - -	24,362.32
Total income, - - -	766,350.93
Net earnings, after deducting expenses,	122,688.62

ESTIMATED DEPRECIATION BEYOND THE RENEWALS, VIZ:

Roads and fences,	$21,938.35, included in expenditures for working the road,
Buildings, - - - -	None.
Engines and cars, - -	

SAMUEL NOTT, *Superintendent.*

February 26th, 1868.

NEW LONDON NORTHERN RAILROAD.

Return of the New London Northern Railroad, under the Act of 1853.

Capital Stock, - -	$750,000.00 1st class stock. 145,000.00 2d " "	
Total amount of capital stock paid in, -		$895,000.00
Funded debt per last Report, -	356,900.00	
Funded debt, increase of, since last Report, - - - -	73,100.00	
Total present amount of funded debt, -		430,000.00
Floating debt, per last Report, -	187,500.00	
Floating debt, increase of, since last Report, - - - -	114,500.00	
Total present amount of floating debt, -		302,000.00
Total present amount of funded and floating debt, - - -		732,000.00

COST OF ROAD AND EQUIPMENT.

For graduation and masonry per last Report,	
For graduation and masonry, paid during the past year, - - -	
Total amount expended for graduation and masonry, - - -	
For wooden bridges, per last Report, -	
For wooden bridges, paid during the past year, - - - -	
Total amount expended for wooden bridges,	
Total amount expended for iron bridges, (if any,) - - - -	
For superstructure, including iron, per last Report, - - - -	

For superstructure, including iron, paid during the past year,	$1,486,492.98
Total amount expended for superstructure, including iron,	
For stations, buildings and fixtures, per last Report,	
For stations, buildings and fixtures, paid during the past year,	
Total amount expended for stations, buildings and fixtures,	
For land, land-damages and fences, per last Report,	
For land, land-damages and fences, paid during the past year,	
Total amount expended for land, land-damages and fences,	
For locomotives per last Report,	
For locomotives paid during the past year,	
Total amount expended for locomotives,	
For passenger and baggage cars, per last Report,	
For passenger and baggage cars, paid during the past year,	
Total amount expended for passenger and baggage cars,	
For merchandise cars, per last Report,	
For merchandise cars, paid during the past year,	
Total amount expended for merchandise cars,	
For engineering, per last Report,	
For engineering, paid during the past year,	
Total amount expended for engineering,	
For agencies and other expenses, per last Report,	
For agencies and other expenses, paid during the past year,	
Total amount expended for agencies and other expenses,	
Total cost of road and equipments,	

CHARACTERISTICS OF ROAD.

Length of road, - - - -	100 miles.
Length of single main track, - -	100 miles.
Length of branches owned by the company, stating whether they have a single or double track, - - -	None.
Aggregate length of sidings, and other tracks, excepting main track and branches, - - - - -	about 6 miles.
Weight of rail, per yard, in main road,	51 to 57 lbs. per yard.
Specify the different weights per yard,	56 to 553 lbs.
Maximum grade, with its length, in main road, - - - - -	66 feet for 2000 feet.
Total rise and fall in main road, -	1856 feet.
Shortest radius of curvature, with length of curve in main road, - - -	570 feet for 500 feet.
Total length of straight line in main road,	62 miles.
Aggregate length of wooden truss bridges,	3568 feet.
Aggregate length of all other wooden bridges, - - - - -	5850 feet.
Number of public ways crossed at grade,	82
Number of railroads crossed at grade,	2
Way stations for express trains, - -	10
Way stations for accommodation trains,	17
Flag stations, - - - - -	18
Whole number of way stations, -	17
Whole number of flag stations, - -	18

DOINGS DURING THE YEAR.

Miles run by passenger trains, - -	194,467
Miles run by freight trains, - -	82,865
Miles run by other trains, (N. & W. R. R.) 29,425, - - - - -	45,889
Total miles run, - - - -	323,221
Number of passengers carried in the cars, (N. & W., 52,725,) - -	310,995
Number of passengers carried one mile,	5,270,673
Number of tons of merchandise carried in the cars, (N. & W., 52,722,) -	149,240

Number of tons of merchandise carried one mile, - - - - -	5,120,245
Rate of speed adopted for accommodation trains, - - - - -	25 miles per hour.
Rate of speed actually attained by accommodation trains, including stops and detentions, - - - -	30 miles per hour.
Average rate of speed adopted for freight trains, including stops and detentions,	12 miles per hour.
Estimated weight in tons of passenger cars, (not including passengers) hauled one mile, - - - - -	5,595,850
Estimated weight in tons of merchandise cars, (not including freight) hauled one mile, - - - - -	7,130,875

EXPENDITURES FOR WORKING THE ROAD.

For repairs of roads, maintenance of way, exclusive of wooden bridges, and renewals of iron, - - -	$57,071.84	
Repairs of wooden bridges, - -	6,486.95	
For renewals of iron, including laying down, (Included in No. 1,) - -		
For wages of switchmen, average per month, $30, - - - -	Total, $7,108.99	
For wages of signal-men, average per month, $30, - - - -		
For wages of watchmen, average per month, $40, - - - -		
Number of men employed, exclusive of those engaged in construction, - -		175
For removing ice and snow, (this item to include all labor, tools, repairs, and extra steam-power used,) - -	2,742.21	
For repairs of fences, gates, houses for signal-men, gate-keepers, switchmen, tool houses, - - - - -	9,412.06	
Total for maintenance of way, -		$82,822.05
*Loss and damage of goods and baggage,		

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* Included in Gratuities and Damages.

*Damages for injuries to persons, -	
*Damages to property, including damages by fire, - - - - -	
*Damages for cattle killed on road, -	

MOTIVE POWER AND CARS.

For repairs of locomotives, - -	$22,158.45	
For repairs of passenger cars, -	9,537.61	
For repairs on merchandise cars, -	13,553.10	
For repairs of gravel and other cars,	396.48	
Total for maintenance of motive power and cars, - - - - -		$45,645.66
Number of engines, - - -		15
Number of passenger cars, - - -		13
Number of baggage cars, - -		7
Number of merchandise cars, - -		219
Number of gravel cars, - - -		90

MISCELLANEOUS.

For fuel used by engines during the year, viz:	
Wood, - - - - - -	$28,310.23
Coal, - - - -	
For oil used by cars and engines,	4,807.61
For waste and other materials for cleaning, - - - - - -	1,602.43
For salaries, wages and incidental expenses, chargeable to passenger department, - - - - -	26,261.52
For salaries, wages and incidental expenses, chargeable to freight department, - - - - - -	34,695.89
For gratuities and damages, - -	3,719.67
For taxes and insurance, - - -	26,341.19
For ferries, - - - - -	1,637.44
For repairs of station buildings, acqueducts, fixtures, furniture, - - -	7,955.39
For interest, - - - - -	43,918.11

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* Included in Gratuities and Damages.

For salaries of president, treasurer, superintendent, law expenses, office expenses of the above officers, and all other expenses not included in any of the foregoing items, - - -	$14,028.07—	193,277.55
Total expenditures for working the road,		321,745.24

INCOME DURING THE YEAR.

For passengers:—		
On main road, including branches owned by company, - - - - -	$167,571.73	
For freight:—		
On main road and branches owned by company, - - - - -	195,995.89	
U. S. Mails, - - - - -	11,385.00	
Rents, - - - - - -	6,886.33	
Total income, - - - -		$381,838.95
Net earnings, after deducting expenses,		60,093.71

DIVIDENDS.

8 per cent. total on $750,000 1st deposit stock, - - - - - -	$60,000.00	
Surplus not divided, - - -		none.
Surplus last year, - - - -		none.
Total surplus, - - - -		none.

New London, February 10th, 1868.

A. N. RAMSDELL,
President.

Subscribed and sworn to at said New London, this 10th day of February, 1868. Before me,

ROBERT COIT, Jr.,
Justice of the Peace.

HOUSATONIC RAILROAD.

Return of the Housatonic Railroad for the year ending December 31st, 1867.

Capital Stock, - - -	$2,000,000.00	
Capital paid in, per last Report, -	2,000,000.00	
Total amount of Capital Stock paid in,	2,000,000.00	
Funded debt, per last Report, -	272,500.00	
Funded debt, increase of, since last Report, - - - -	15,000.00	
Total present amount of funded debt,	287,000.000	
Floating debt, per last Report, -	95,527.25	
Floating debt, increase of, since last Report, - - - -	31,834.07	
Total present amount of floating debt,	127,361.32	
Total present amount of Funded and Floating debt, - - -	414,361.32	
Average rate of interest, per annum, paid during the year, - -		7 per cent.

COST OF ROAD AND EQUIPMENT.

Total cost of road and equipment,	2,105,558.52

CHARACTERISTICS OF ROAD.

Length of road, - - -	*124 miles.
Weight of rail, per yard, in main road,	54 lbs.
Number of public ways crossed at grade,	81

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*74 in Connecticut, 50 in Massachusetts.

Number of railroads crossed at grade,	1
Way stations for accommodation trains,	13
Flag stations,	5
Whole number of way stations,	13
Whole number of flag stations,	5

DOINGS DURING THE YEAR.

Miles run by passenger trains,	163,983
Miles run by freight trains,	89,060
Miles run by other trains,	15,565
Total miles run,	268,608
Number of passengers carried in the cars,	171,534
Number of passengers carried one mile,	5,489,088
Number of tons of merchandise carried in the cars,	91,529
Number of tons of merchandise carried one mile,	6,498,559
Number of passengers carried one mile, to and from other roads,	1,189,573
Rate of speed adopted for accommodation trains,	25 miles per hour.
Rate of speed actually attained by accommodation trains, including stops and detentions,	20 miles per hour.
Average rate of speed adopted for freight trains, including stops and detentions,	9 miles per hour.

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, exclusive of wooden bridges, and renewals of iron,	$81,455.27	
Number of men employed, exclusive of those engaged in construction,		275
For removing ice and snow, (this item to include all labor, tools, repairs, and extra steam-power used,)		included in repairs of road.
Total for maintenance of way,		103,215.31
Damages for injuries to persons,		1,995.41
Damages to property,		
Damages for cattle killed on road,		

MOTIVE POWER AND CARS.

For repairs of locomotives,	$16,084.01	
For new locomotives to cover depreciation,	33,500.00	
For repairs of passenger cars,	8,787.38	
For new passenger cars to cover depreciation,	5,024.48	
For repairs on merchandise cars,	9,045.31	
For new merchandise cars to cover depreciation,	19,909.21	
Total for maintenance of motive power and cars,	92,350.39	
Number of engines,		12
Number of passenger cars,		14
Number of baggage cars,		6
Number of merchandise cars,		253

MISCELLANEOUS.

List of accidents to persons,
1 boy asleep in track.
1 man, said to have been drunk.

List of accidents to cattle and the amount paid for each, - - -
7 yearlings, 7 cows, 3 oxen, 3 horses.

For fuel used by engines during the year, viz:

Wood,	50,268.48
Coal,	2,549.14
For oil used by cars and engines,	3,578.03
For waste and other materials for cleaning,	2,215.90
For salaries, wages and incidental expenses, chargeable to passenger department,	30,107.05
For salaries, wages and incidental expenses, chargeable to freight department,	52,204.07
For gratuities and damages,	12,683.50
For taxes and insurance,	15,430.20

For repairs of station buildings, acqueducts, fixtures, furniture, - -	$7,782.87
For interest, - - -	23,327.86
For amount paid other companies, for the use of their roads, specifying each company, - - - -	*74,096.58
For salaries of president, treasurer, superintendent, law expenses, office expenses of the above officers, and all other expenses not included in any of the foregoing items, - -	21,317.77
Total expenditures for working the road,	†493,122.53

INCOME DURING THE YEAR.

For Passengers:	
On main road, including branches owned by company, - - - To and from other roads, specifying what,	177,140.69
For Freight:	
On main road and branches owned by company, - - - To and from connecting roads, - -	325,002.69
U. S. Mail, - - -	7,186.00
Rents, - - - -	566.93
Total income, - - -	534,544.69
Net earnings, after deducting expenses,	41,422.16

DIVIDENDS.

$4 per share on preferred capital stock,	47,200.00
Surplus last year, - -	48,052.89
Toatl surplus, - - -	39,790.84

ESTIMATED DEPRECIATION BEYOND THE RENEWALS, &C.

Roads and bridges, - - -	none.
Buildings, - - -	none.
Engines and cars, - - -	none.

JOHN Z. GOODRICH,
President.

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*Stockbridge & Pittsfield Railroad, $31,409.00; Berkshire Railroad, $42,000.00; West Stockbridge Railroad, $687.55.

†Including Taxes, Interest, Rents of other roads, new locomotives and cars.

FAIRFIELD COUNTY, ss.
BRIDGEPORT, CONN., Feb. 12th, 1868.

Personally appeared John Z. Goodrich, Esq., President of the Housatonic Railroad Company, and made oath that the foregoing statement signed by him is true, according to the best of his knowledge, information and belief.

CHARLES K. AVERILL,
Notary Public.

NAUGATUCK RAILROAD.

Return of the Naugatuck Railroad, under the Act of 1853, *for the year ending December* 31, 1867.

Capital Stock, by charter,	$2,000,000.00	
Capital paid in, per last Report,	1,408,600.00	
Capital paid in, since last Report,	28,000.00	
Total amount of Capital Stock paid in,	1,436,600.00	
Funded debt per last Report,	224,000.00	
Funded debt, paid since last Report,	28,000.00	
Funded debt, increase of, since last Report,	none.	
Total present amount of funded debt,	196,000.00	
Total present amount of funded and floating debt,	196,000.00	
Average rate of interest, per annum, paid during the year,		7 per cent.

COST OF ROAD AND EQUIPMENT.

For graduation and masonry, per last Report,
For graduation and masonry, paid during the past year,
Total amount expended for graduation and masonry,
For wooden bridges per last Report,
For wooden bridges, paid during the past year,
Total amount expended for wooden bridges,
Total amount expended for iron bridges, (if any,)

For superstructure, including iron, per last Report, - - - - - -	$1,690,395.45
For superstructure, including iron, paid during the past year, - - - - -	
Total amount expended for superstructure, including iron, - - - - -	
For stations, buildings and fixtures, per last Report, - - - - - -	
For stations, buildings and fixtures, paid during the past year, - - - -	
Total amount expended for stations, buildings and fixtures, - - - - -	
For land, land-damages and fences, per last Report, - - - - - -	
For land, land-damages and fences, paid during the past year, - - - -	
Total amount expended for land, land-damages and fences, - - - - -	
For locomotives per last Report, - -	
For locomotives paid during the past year,	
Total amount expended for locomotives,	
For passenger and baggage cars, per last Report, - - - - - -	
For passenger and baggage cars, paid during the past year, - - - -	
Total amount expended for passenger and baggage cars, - - - - -	
For merchandise cars, per last Report,	
For merchandise cars, paid during the past year, - - - - - - -	
Total amount expended for merchandise cars,	
For engineering per last Report, - -	
For engineering paid during the past year,	
Total amount expended for engineering,	
For agencies and other expenses, per last Report, - - - - - -	
For agencies and other expenses, paid during the past year, - - - - -	
Total amount expended for agencies and other expenses, - - - - -	
Total cost of road and equipments, - -	

CHARACTERISTICS OF ROAD.

Length of road,	57 miles.
Length of single main track,	57 miles.
Aggregate length of sidings, and other tracks, excepting main track and branches,	21,035
Weight of rail, per yard in main road,	52 and 57 lbs. per yard.
Specify the different weights per yard,	52 and 57 lbs. per yard.
Maximum grade, with its length, in main road,	62 feet 2½ miles.
Total rise and fall in main road,	810 feet rise 98 feet fall.
Shortest radius of curvature, with length of curve, in main road,	600 feet, 30 rods.
Total length of straight line, in main road,	14 miles.
Aggregate length of wooden truss bridges,	1297 feet.
Aggregate length of all other wooden bridges,	3782 feet.
Number of public ways crossed at grade,	52
Way stations for accommodation trains,	17
Flag stations,	3
Whole number of way stations,	17
Whole number of flag stations,	3

DOINGS DURING THE YEAR.

Miles run by passenger trains,	93,706
Miles run by freight trains,	64,873
Miles run by other trains,	17,742
Total miles run,	176,321
Number of passengers carried in the cars,	243,057
Number of passengers carried one mile,	4,709,851
Number of tons of merchandise carried in the cars,	135,913
Rate of speed adopted for accommodation trains,	20 miles per hour.
Rate of speed actually attained by accommodation trains, including stops and detentions,	18 miles per hour.
Average rate of speed adopted for freight trains, including stops and detentions,	9 miles per hour.
Estimated weight in tons of passenger cars, (not including passengers) hauled one mile,	3,160,540
Estimated weight in tons of merchandise cars, (not including freight) hauled one mile,	6,278,086

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, exclusive of wooden bridges, and renewals of iron,	$84,068.05	
Repairs of wooden bridges,		
For wages of switchmen, average per month,	47.00	
For wages of signal-men, average per month,	47.00	
For wages of watchmen, average per month,	50.00	
Number of men employed, exclusive of those engaged in construction,		175
Loss and damage of goods and baggage,	4,478.58	
Damages for injuries to persons,		
Damages to property, including damages by fire,		

MOTIVE POWER AND CARS.

For repairs of locomotives,	$22,916.64	
For new locomotives to cover depreciation,		
For repairs of passenger cars,	7,884.46	
For repairs on merchandise cars,	28,820.17	
Number of engines,		10
Number of passenger cars,		11
Number of baggage cars,		4
Number of merchandise cars,		197

MISCELLANEOUS.

List of accidents to persons,

September 5th, Lucius Skinner, Egbert Sperry, Patrick Roach, James Bomberry, John Softly, Michael Donohoe and John Canty, were drowned at Branch Bridge.

July 19th, Peter Hall, a brakeman, was injured by the cars .

May 10th, Morris Rails was injured while switching.

May 21st, Frank Grebber was injured by jumping off the train.

List of accidents to cattle and the amount paid for each,

James Hickey, cow killed May 9th.

Gaines Curtis cow killed June 10th.

Northrop Smith, ox killed July 9th.

N. B. Tolls, cow killed August 22d.
Seth Thomas, cow killed August 27th.
Haney Sherry, cow killed October.
Widow Camery, hog killed September 16th.
James Heckey, two calves killed November 14th.

For fuel used by engines during the year, viz:

Wood,	$6,960.40	
Coal,	21,737.99	
For oil used by cars and engines,	1,638.83	
For waste and other materials for cleaning,	1,322.38	
For salaries, wages and incidental expenses, chargeable to passenger department,	18,341.93	
For salaries, wages and incidental expenses, chargeable to freight department,	49,670.20	
For taxes and insurance,	30,891.19	
For repairs of station buildings, acqueducts, fixtures, furniture,	18,405.84	
For interest,	13,996.50	
For salaries of president, treasurer, superintendent, law expenses, office expenses of the above officers, and all other expenses not included in any of the foregoing items,	12,318.01	
Total expenditures for working the road, including interest,		$323,451.17

INCOME DURING THE YEAR.

For passengers:—		
On main road, including branches owned by company,	$170,594.18	
For freight:—		
On main road and branches owned by company,	280,694.84	
U. S. Mails,	4,550.00	
Express and other sources,	17,796.02	$473,635.04
Net earnings, after deducting expenses,		150,183.87

DIVIDENDS.

Ten per cent. total, - - - -	$141,685.00
Surplus not divided, - - -	8,498.87
Surplus last year, - - - -	219,734.01
Total surplus, - - - -	228,232.88

R. TOMLINSON,
President.

FAIRFIELD COUNTY, ss. BRIDGEPORT,
February 8th, 1868.

Personally appeared R. Tomlinson, President of the Naugatuck Railroad Company, and made oath that the foregoing return by him subscribed is true according to his best knowledge and belief.

Before me,

H. NICHOLS,
Notary Public.

DANBURY AND NORWALK RAILROAD.

Return of the Danbury and Norwalk Railroad, under the Act of 1853, *for the year ending December* 31*st*, 1867.

Capital Stock,	$400,000.00
Increase of Capital, since last Report,	93,100.00
Capital paid in per last report,	306,900.00
Capital paid in, since last Report,	93,600.00
Total amount of Capital Stock paid in,	400,000.00
Funded debt per last Report,	100,000.00
Total present amount of funded debt,	100,000.00
Floating debt, per last Report,	none.
Total present amount of floating debt,	none.
Total present amount of funded and floating debt,	100,000.00
Average rate of interest, per annum, paid during the year,	7 per cent on bonds.

COST OF ROAD AND EQUIPMENT.

For graduation aud masonry, per last report,
For graduation and masonry, paid during the past year, - -
Total amount expended for graduation and masonry, - - - -
For wooden bridges, per last report, -
For wooden bridges, paid during the past year, - - - -
Total amount expended for wooden bridges,
Total amount expended for iron bridges, (if any,) - - - -
For superstructure, including iron, per last Report, - - - -
For superstructure, including iron, paid during the past year, - - - *
Total amount expended for superstructure, including iron, - - - -
For stations, buildings and fixtures, per last Report, - - - -
For stations, buildings and fixtures, paid during the past year, - - -
Total amount expended for stations, buildings and fixtures, - - -
For land, land-damages and fences, per last Report, - - - -
For land, land-damages and fences, paid during the past year, - - -
Total amount expended for land, land-damages and fences, - - -
For locomotives per last Report, - -
For locomotives paid during the past year,
Total amount expended for locomotives, -
For passenger and baggage cars, per last Report, - - - -
For passenger and baggage cars, paid during the past year, - - - †

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*Construction account, $351.998.62, same as last year. †Equipment account, $75,283.23, same as last year.

Total amount expended for passenger and baggage cars, - - - -	
For merchandise cars, per last Report,	
For merchandise cars, paid during the past year, - - - -	
Total amount expended for merchandise cars,	
Total cost of road and equipments,	$427,281.85
Real estate account, - - -	8,256.50

CHARACTERISTICS OF ROAD.

Length of Road, - - - Length of single main track, -	$23\frac{8}{10}$ miles.
Length of double main track, -	none.
Length of branches owned by the company, stating whether they have a single or double track, - -	none.
Aggregate length of sidings, and other tracks, excepting main track and branches, - - - -	$2\frac{3}{4}$ miles.
Weight of rail, per yard, in main road,	53 and 57 lbs.
Maximum grade, with its length of main road, - - - -	65 feet per mile for 4,295 ft.
Total rise and fall in main road, -	695 feet.
Shortest radius of curvature, with length of curve, in main road, - -	514 feet for 435 feet.
Total degrees of curvature, in main road, - - - -	1561°
Total length of straight line, in main road, - - - -	$17\frac{35}{100}$ miles.
Aggregate length of wooden truss bridges, - - - -	839 feet.
Aggregate length of all other wooden bridges, - - - -	134 feet.
Number of public ways crossed at grade,	46
Way stations for accommodation trains,	9
Flag stations, - - - -	3
Whole number of way stations, -	9
Whole number of flag stations, -	3

DOINGS DURING THE YEAR.

Miles run by passenger trains,	33,000
Miles run by freight trains,	26,900
Miles run by other trains,	4,770
Total miles run,	64,670
Number of passengers carried in the cars,	103,119
Number of passengers carried one mile,	1,252,512
Number of tons of merchandise carried in the cars,	38,383
Number of tons of merchandise carried one mile,	707,313
Number of passengers carried one mile to and from other roads,	472,751
Number of tons carried one mile, to and from other roads,	249,333
Rate of speed adopted for accommodation trains,	25 miles
Rate of speed actually attained by accommodation trains, including stops and detentions,	
Average rate of speed adopted for freight trains, including stops and detentions,	12 miles.

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, including renewals of iron,	$48,277.28
Repairs of wooden bridges,	6,012.63
For wages of switchmen, average per month, $45.50,	
For wages of watchmen, average per month, $45.50.	
Number of men employed, exclusive of those engaged in construction,	about 50
For repairs of fences, gates, houses for signal-men, gate-keepers, switchmen, tool houses,	1,456.85
Total for maintenance of way,	55,746.76

Loss and damage of goods and baggage, Damages for injuries to persons, Damages to property, including damages by fire, Damages for cattle killed on road,	$534.57

MOTIVE POWER AND CARS.

For repairs of locomotives, For new locomotives to cover depreciation,	19,341.26
For repairs of passenger cars, For new passenger cars to cover depreciation, For repairs on merchandise cars, For new merchandise cars to cover depreciation,	21,950.86
Number of engines,	5
Number of passenger cars,	6
Number of baggage cars,	2
Number of merchandise cars,	58
Number of gravel cars,	none.

MISCELLANEOUS.

List of accidents to persons,	Reported to Commissioners, no passengers injured.

List of accidents to cattle and the amount paid for each.

David Chapman, one steer, $35.00.

For fuel used by engines during the year,	
Wood,	12,171.50
For waste and other materials for cleaning, For salaries, wages and incidental expenses, chargeable to passenger department, For salaries, wages and incidental expenses chargeable to freight department,	19,941.53
For repairs of station buildings, acqueducts, fixtures, furniture,	11,968.73

For other expenses not included in any of the foregoing items, - -	$3,808.46
Total expenditures for working the road,	145,463.67
List of accidents to operatives and employees on the road, -	none.

INCOME DURING THE YEAR.

For Passengers :—	
On main road, including branches owned by Company, - - -	62,689.05
For Freight :—	
On main road and branches owned by Company, - - - -	89,114.34
U. S. Mails, - - -	1,700.00
Rents and express, - - -	3,252.24
Total income, - - -	156,755.63
Net earnings, after deducting expenses,	11,291.96

DIVIDENDS—NONE.

Surplus not divided, - - -	9,622,97
Total surplus, - - -	9,622.97

ESTIMATED DEPRECIATION BEYOND THE RENEWALS, VIZ :

Roads and bridges, - - -	none.
Buildings, - - -	
Engines and cars, - - -	

EDWIN LOCKWOOD, *President.*

Sworn to before me, this 10th day of February, 1868.

JOSEPH W. HUBBELL,

Justice of the Peace.

NEW HAVEN AND NORTHAMPTON RAILROAD.

Report of the Directors of the New Haven and Northampton Corporation, for the year ending November 30th, 1867.

Capital Stock,	$1,334,000.00	
Number of shares of capital stock issued,	13,340.00	
Increase of capital since last Report,	120,000.00	
Capital paid in per last Report,	1,214,000.00	
Capital paid in since last Report,	120,000.00	
Total amount of capital stock paid in,	1,334,000.00	
Funded debt per last Report,	650,000.00	
Total present amount of funded debt,	650,000.00	
Total present amount of floating debt,	142,166.73	
Total present amount of funded and floating debt,	142,166.73	
Average rate of interest per annum, paid during the year,		7 per cent.

COST OF ROAD AND EQUIPMENT.

For graduation and masonry per last Report,		
For graduation and masonry, paid during the past year, $126,961.31, - - -		
Total amount expended for graduation and masonry, - - -		
For wooden bridges, per last Report, -		
For wooden bridges, paid during the past year, - - - -		
Total amount expended for wooden bridges,		
Total amount expended for iron bridges, (if any,) - - - -		
For superstructure, including iron, per last Report, - - - -		
For superstructure, including iron, paid during the past year, $89,018.00 - -	*	
Total amount expended for superstructure, including iron, - - -		
For stations, buildings and fixtures, per last Report, - - - -		
For stations, buildings and fixtures, paid during the past year, $3,985.31 - -		
Total amount expended for stations, buildings and fixtures, - - -		
For land, land-damages and fences, per last Report, - - - -		
For land, land-damages and fences, paid during the past year, $19,560.01 - -		
Total amount expended for land, land-damages and fences, - - -		
For locomotives per last Report, - -	45,028.19	
For locomotives paid during the past year,	15,526.03	
Total amount expended for locomotives,		$60,554.22

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* The company is unable to give these items in detail, as the road was built by various Corporations. The cost as reported to them was—

New Haven to Granby, and branches, - -	$1,713,932.00
Granby to State line, - - - - -	13,340.00
State line to Northampton, - - - -	577,932.62
	$2,305,204.62

For passenger and baggage cars, per last Report,	$5,128.56	
For passenger and baggage cars, paid during the past year,	4,452.91	
Total amount expended for passenger and baggage cars,		$9,581.47
For merchandise cars, per last Report,	24,263.99	
For merchandise cars, paid during the past year,	10,525.99	
Total amount expended for merchandise cars,		34,789.98
For engineering, paid during the past year,	6,145.28	
For agencies and other expenses, paid during the past year,	267.70	
Total amount expended for agencies and other expenses,	245,937.61*	

CHARACTERISTICS OF ROAD.

Length of road,	93 miles.
Length of single main track,	93 miles.
Length of double main track,	none.
Length of branches owned by the company, stating whether they have a single or double track,	8¾ miles single track.
Weight of rail, per yard, in main road,	54 to 56 lbs.
Weight of rail, per yard, in branch roads, specify the different weights per yard,	same as above.
Maximum grade, with its length, in main road,	†
Maximum grade, with its length, in branch roads,	
Total rise and fall in main road,	
Total rise and fall in branch roads,	
Shortest radius of curvature, with length of curve in main road,	

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* An extension of eight miles from Northampton to Williamsburgh, now nearly completed at a cost thus far of $245,937.61, will be opened about February 1st, 1868.

Total cost of road and equipment thus far, - - $2,551,142.23

† The original survey is not in possession of this Company, therefore these questions cannot be answered.

Shortest radius of curvature, with length of curve in branch roads,	
Total degrees of curvature in main road,	
Total degrees of curvature in branch roads,	
Total length of straight line in main road,	
Total length of straight line in branches,	
Aggregate length of wooden truss bridges,	1442 feet.
Aggregate length of all other wooden bridges,	2500 feet.
Number of public ways crossed at grade,	82 in Conn., 36 in Mass.—118
Number of railroads crossed at grade,	Two, viz., Western at Westfield, H. P. & F., at Plainville.
Way stations for express trains,	14 in Conn., 4 in Mass.—18
Flag stations,	5 in Conn., 2 in Mass.—7
Whole number of way stations,	25
Whole number of flag stations,	7

DOINGS DURING THE YEAR.

North of Granby.

Miles run by passenger trains,	18,761
Miles run by freight trains,	28,702
Miles run by other trains,	5,000
Total miles run,	52,463
Number of passengers carried in the cars,	54,393
Number of passengers carried one mile,	606,162
Number of tons of merchandise carried in the cars,	39,806
Number of tons of merchandise carried one mile,	835,832
Number of passengers carried one mile to and from other roads,	203,002
Number of tons carried one mile to and from other roads,	750,340
Rate of speed adopted for accommodation trains,	25 miles.
Rate of speed actually attained by accommodation trains, including stops and detentions,	25 miles.
Average rate of speed adopted for freight trains, including stops,	15 miles.

EXPENDITURES FOR WORKING THE ROAD.

North of Granby.

For repairs of road, maintenance of way, exclusive of wooden bridges,	$33,340.52

Repairs of wooden bridges, - -	$309.19	
For wages of switchmen, average per month, For wages of gate-keepers, average per month, For wages of signal-men, average per month, For wages of watchmen, average per month,	Included in other accounts.	
Number of men employed, exclusive of those engaged in construction, - -		75
For removing ice and snow, (this item to include all labor, tools, repairs, and extra steam-power used,) - -	4,194.20	
For repairs of fences, gates, houses for signal-men, gate-keepers, switchmen, tool houses, - - - - -	1,881.14	
Total for maintenance of way, -		$39,725.05

MOTIVE POWER AND CARS.

North of Granby.

For repairs of locomotives, - -	$7,449.71	
For repairs of passenger cars and freight cars, - - - - - -	1,761.33	
For repairs of merchandise cars, included above, - - - - - -		
Total for maintenance of motive power and cars, - - - - -		$9,211.04
Number of engines, - - -		5
Number of passenger cars, - - -		3
Number of baggage cars, - -		1
Number of merchandise cars, - -		32

MISCELLANEOUS.

North of Granby.

List of accidents to persons,

August 2d, Charles McCarty, a brakeman while standing on the top of a moving freight car, struck a bridge near Southwick, and was seriously but not fatally injured.

August 21st, A deaf man named McCullum, while walking on the track near East Hampton, was struck by an engine and instantly killed.

October 27, George L. French, a brakeman, was thrown from a freight train between Westfield and Southwick, and instantly killed.

For fuel used by engines during the year, viz:		
Wood, number of cords, 2,157, cost of the same,	$10,784.39	
Coal, number of tons (reckoning 2,240 lbs. to the ton,)	None.	
For oil used by cars and engines, For waste and other materials for cleaning,	2,294.56	
For salaries, wages and incidental expenses, chargeable to passenger department, For salaries, wages and incidental expenses, chargeable to freight department,	28,234.74	
For gratuities and damages,	956.44	
For taxes and insurance,	2,911.49	
For repairs of station buildings, aqueducts, fixtures, furniture,	271.84	
For renewals of iron, including laying down, included above,		
For amount paid other companies, in tolls for passengers and freight carried on their roads, specifying each company, rent of shops, &c.,	945.25	
For salaries of president, treasurer, superintendent, law expenses, office expenses, of the above offices, and all other expenses not included in any of the foregoing items,	3,546.82	
Total miscellaneous,		$49,945.53
Total expenditure for working the road,		98,881.62
Total amount of interest paid during the year,		48,662.13

INCOME DURING THE YEAR.

North of Granby.

For passengers:—	
On main road, including branches owned by company,	$23,626.12
For freight:—	
To and from other connecting roads,	55,006.92

United States Mails,	$2,346.33	
Rents,	1,215.86	
Total income,		$82,195.23

EARNINGS OF ROAD ABOVE GRANBY.

(Northampton to State line.)

Freight,	$46,205.81		
Passengers,	19,845.94		
Mails,	1,970.92		
Rents,	232.36		
		$68,255.03	

(State line to Granby.)

Freight,	8,801.11		
Passengers,	3,780.18		
Mails,	375.41		
Rents,	983.50		
Total,		13,940.20	$82,195.23

EXPENDITURES ABOVE GRANBY.

Northampton to State line,	$83,060.56	
State line to Granby,	15,821.06	$98,881.62

EARNINGS FROM GRANBY TO NEW HAVEN.

Freight, passengers, mails and express.

N. B.—The earnings between Granby and New Haven, are as given by the New York and New Haven Railroad, who operate that portion of the road under a lease ending June 30th, 1869. They make no return of expenses.

DIVIDENDS.

Two per cent. total,	$25,557.89

MORTGAGE DEBTS.

Amount of debts secured by mortgage of road and franchise, or any property of the Corporation, per last Report,	$650,000.00	
Number of mortgages on road and franchise, or any property of the Corporation,	Two.	$650,000.00

JOS. E. SHEFFIELD, President, WM. JOHNSON, M. G. ELLIOTT, A. L. KIDSTON, S. D. PARDEE, WM. W. BOARDMAN, CHARLES N. YEOMANS,	Directors of the New Haven and Northampton Company.

NEW HAVEN CITY AND COUNTY, } ss.
January 9th, 1868.

Then personally appeared Joseph E. Sheffield, Wm. Johnson, M. G. Elliott, A. L. Kidston, S. D. Pardee, Wm. W. Boardman and Charles N. Yeomans, and severally made oath to the truth of the foregoing statement by them subscribed. Before me,

JOHN S. GRAVES,
Notary Public.

SHORE LINE RAILWAY.

Return of the Shore Line Railway, under the Act of 1853, *for the year ending May* 31*st*, 1867.

Capital Stock, - - -	$635,200.00	
Total amount of Capital Stock paid in,	635,200.00	
Funded debt, increase of, since last Report, - - - -	55,000.00	
Total present amount of funded debt,	55,000.00	
Floating debt, per last Report, -	44,000.00	
Floating debt, paid since last Report,	44,000.00	
Total present amount of funded and floating debt, - - -	55,000.00	
Average rate of interest, per annum, paid during the year, - - - -		6 per cent.

COST OF ROAD AND EQUIPMENT.

Total cost of road and equipments, -	749,422.05

CHARACTERISTICS OF ROAD.

Length of road, - - -	50 miles.
Aggregate length of sidings, and other tracks, excepting main track and branches, - - - -	2½ miles.
Weight of rail, per yard, in main road,	56 pounds.
Maximum grade, with its length, in main road, - - - -	44 feet, 400 feet long.
Shortest radius of curvature, with length of curve, in main road, - -	573 feet, 400 feet long.
Total length of straight line, in main road,	30 miles.
Aggregate length of wooden truss bridges,	1,748 feet.
Number of public ways crossed at grade,	88

Number of railroads crossed at grade,	1
Way stations for express trains, -	2
Way stations for accommodation trains,	13
Flag stations, - - -	4
Whole number of way stations, -	17
Whole number of flag stations, -	4

DOINGS DURING THE YEAR.

Total miles run, - - -	165,280
Number of passengers carried in the cars,	224,796
Rate of speed adopted for express passenger trains, including stops, -	30 miles per hour.
Rate of speed adopted for accommodation trains, - - - -	20 miles per hour.
Average rate of speed adopted for freight trains, including stops and detentions,	15 miles per hour.

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, (exclusive of wooden bridges,) and renewals of iron, - - - -	$20,175.49	
Repairs of wooden bridges, - -	4,389.96	
For renewals of iron, including laying down, - - - -	24,402.76	
Number of men employed, exclusive of those engaged in construction, -		159
For removing ice and snow, (this item to include all labor, tools, repairs, and extra steam-power used,) - -	1,354.47	
For repairs of fences, gates, houses for signal-men, gate-keepers, switchmen, tool houses, - - -	270.95	
Loss and damage of goods and baggage, Damages for injuries to persons, - Damages to property, including damages by fire, - - - - - - Damages for cattle killed on road, -	342.89	
Repairs of buildings, - - -	131.38	
Water, - - - - -	306.00	
Steamboat repairs, - - -	4,013.95	
Total maintenance of way, - -		$55,387.85

MOTIVE POWER AND CARS.

For repairs of locomotives, For new locomotives to cover depreciation,	$18,590.70	
For new passenger cars to cover depreciation,	9,310.35	
For repairs on merchandise and passenger cars,	18,240.82	
Number of engines,		9
Number of passenger cars,		13
Number of baggage cars,		7
Number of merchandise cars,		30

MISCELLANEOUS.

Line expenses,	$2,250.20
Machines and tools,	1,730.26
Fuel for stations and stationary engines,	2,092.97
For fuel used by engines during the year, viz., Wood, Coal,	28,882.54
For oil used by cars and engines, For waste and other materials for clean'g,	5,209.53
For salaries, wages and incidental expenses, chargeable to passenger department, For salaries, wages and incidental expenses, chargeable to freight department,	45,593.07
For taxes and insurance,	16,052.43
For ferries,	12,619.87
For interest on bonds and floating debt,	3,896.27
For legal expenses, office expenses, and all other expenses not included in any of the foregoing items,	14,957.83
Total expenditures for working the road, including repairs and renewals,	234,814.69

INCOME DURING THE YEAR.

For Passengers:	
On main road, including branches owned by company, - - - -	$230,903.24
For Freight:—	
On main road and branches owned by Company, - - - -	44,915.49
U. S. Mails, rents and expresses,	18,859.63
Total income, - - - -	294,678.36
Net earnings, after deducting expenses,	59,863.67

DIVIDEND.

3 per cent. total, - - -	20,059.95

WM. T. BARTLETT, *Secretary.*

New Haven County, ss.
New Haven, February 7th, 1868.

Personally appeared, Wm. T. Bartlett, Secretary of Shore Line Railway, and made oath in due form of law, that the foregoing return is correct and true, according to his best knowledge and belief.

Before me,

OBADIAH PEASE,
Justice of the Peace.

NEW YORK, PROVIDENCE AND BOSTON RAILROAD.

Return of the New York, Providence & Boston Railroad Company, January 1, 1867, *to January* 1, 1868, *under the Act of* 1853, *and in conformity to Annual Report of Aug.* 31, 1867.

Capital Stock,	$1,754,548.00
Total amount of Capital Stock paid in,	1,754,548.00
Funded debt per last Report,	600,000.00
Total present amount of funded debt,	600,000.00
Total present amount of funded and floating debt,	600,000.00
Average rate of interest, per annum, paid during the year,	6 per cent.

COST OF ROAD AND EQUIPMENT.

For passenger and baggage cars, paid during the past year,	4,930.91
For merchandise cars, paid during the past year,	
Total cost of road and equipments,	2,568,000.00

CHARACTERISTICS OF ROAD.

Length of road,	62 in all, 17 in Conn.
Aggregate length of sidings, and other tracks, excepting main track and branches,	about 4 miles.
Weight of rail, per yard, in main road,	56 and 64 lbs.
Weight of rail, per yard, in branch road,	56 and 64 lbs.
Maximum grade, with its length, in branch roads,	38 feet.
Total rise and fall in main road,	$156\frac{63}{100}$
Shortest radius of curvature, with length of curve, in main road,	1,000 feet.
Aggregate length of wooden truss bridges,	200 feet.
Aggregate length of all other wooden bridges,	7,768 feet
Way stations for express trains,	3
Way stations for accommodation trains,	13
Flag stations,	3
Whole number of way stations,	16
Whole number of flag stations,	3

DOINGS DURING THE YEAR.

Total miles run,	255,401
Number of passengers carried in the cars,	440,081
Number of tons of merchandise carried in the cars,	60,567
Rate of speed adopted for express passenger trains, including stops,	30 miles.
Rate of speed adopted for accommodation trains,	25 miles.
Average rate of speed adopted for freight trains, including stops, and detentions,	15 miles.

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, exclusive of wooden bridges and renewals of iron,	$81,860.17	
For repairs of wooden bridges,	12,896.18	
Number of men employed,		350
Total for maintenance of way,		$94,756.35

MOTIVE POWER AND CARS.

For repairs of locomotives, - -	$23,795.01	
For repairs of cars, - -	22,186.51	
For repairs of merchandise cars, -	4,930.91	
Number of engines, - - -		16
Number of passenger cars, -		15
Number of baggage cars, - -		5
Number of merchandise cars, -		107
Number of gravel cars, - -		10

Also, $\frac{62}{106}$ of 1 passenger car.
$\frac{64}{158}$ of 2 baggage cars.
$\frac{48}{93}$ " 3 " "
$\frac{64}{234}$ " 4 " "
$\frac{50}{94}$ 1 European coach.

MISCELLANEOUS.

List of accidents to persons.

Nathan W. Murfey, of Mystic, was found dead on the track Aug. 17th, near West Mystic Station.

For fuel used by engine during the year, viz: mostly coal, - - -	$29,484.40
For oil used by cars and engines,	7,842.89
For waste and other materials for cleaning, - - - -	1,363.25
For salaries, wages and incidental expenses, chargeable to passenger department, - - - -	93,035.13
For salaries, wages and incidental expenses, chargeable to freight department, - - - -	
For gratuities and damages, -	1,071.96
For taxes, - - -	38,661.85
For ferries, - - -	15,852.57
For repairs of station buildings, aqueducts, fixtures, furniture, - -	15,319.55
For interest on bonds, - -	36,541.00
For law expenses, office expenses of the above officers, and all other expenses not included in any of the foregoing items, - - - -	27,076.82

Total expenditures for working the road,	$330,712.48

List of accidents to operatives and employees on the road.

June 27th, Michael Laurgu brakeman, killed at Groton, Conn., nothing paid.

Nov. 4th, John Gorman, laborer, killed by gravel train being thrown from track.

INCOME DURING THE YEAR.

For Passengers :—	
On main road, including branches owned by company, - -	$338,463.09
For Freight :—	
On main road and branches owned by company, - - - - To and from connecting roads, -	135,223.72
United States Mails, - - -	9,635.66
Rents,- - - -	803.36
Total income, - - -	484,125.83
Net earnings after deducting expenses,	109,820.59

DIVIDEND.

8 per cent. total, - - -	52,639.56
Surplus not divided, - -	10,358.54

ESTIMATED DEPRECIATION BEYOND THE RENEWALS, VIZ:

Roads and bridges, - - -	none.
Buildings, - - -	none.
Engines and cars, - - -	none.

S. D. BABCOCK, *President.*

UNITED STATES OF AMERICA, }
State of New York, City and County of New York, } ss.

Be it remembered, that on this twentieth day of February, in the year one thousand eight hundred and sixty eight, before me, the undersigned, Edwin F. Corey, Jr., Commissioner, resident in the City of New York, duly commissioned and qualified by the executive authority, and under the laws of the State of Connecticut, to take the acknowledgment of deeds, &c., to be used or recorded therein, personally appeared S. D. Babcock, signer of the annexed report, and made oath to the truth of the same, according to his best knowledge and belief, before me, the undersigned: In witness whereof, I have hereunto set my hand and affixed my official seal, the day and year aforesaid.

EDWIN F. COREY, JR.,

Commissioner for the State of Connecticut..

ROCKVILLE RAILROAD.

Return of the Rockville Railroad under the Act of 1853.

Capital Stock, - - -	$100,000.00
Capital paid in per last Report, -	97,750.00
Total amount of Capital Stock paid in,	97,750.00
Funded debt, per last Report, -	42,000.00
Funded debt, paid since last Report,	6,000.00
Total present amount of funded debt,	48,000.00
Floating debt, per last Report, -	16,750.00
Floating debt, paid since last Report,	7,250.00
Total present amount of Floating debt,	9,500.00
Total present amount of Funded and Floating debt, - - -	57,500.00
Average rate of interest, per annum, paid during the year, - -	7½ per cent.

COST OF ROAD AND EQUIPMENT.

For graduation and masonry, per last Report, - - - -	71,887.31
Total amount expended for superstructure, including iron, - - -	31,358.40
Total amount expended for stations, buildings and fixtures, - - -	7,858.81
Total amount expended for land, land-damages and fences, - -	31,895.48
For locomotives per last Report, - -	22,500.00
Total amount expended for locomotives,	22,500.00

For passenger and baggage cars, per last Report,	$6,357.99
Total amount expended for passenger and baggage cars,	6,357.99
Total cost of road and equipments,	171,857.99

CHARACTERISTICS OF ROAD.

Length of road,	$4\frac{3}{10}$ miles.
Length of branches owned by the company, stating whether they have a single or double track,	$\frac{3}{4}$ mile.
Weight of rail, per yard, in main road,	52 lbs.
Maximum grade, with its length, in main road,	62 feet grade.
Shortest radius of curvature, with length of curve, in main road,	716 ft. radius 1050 ft. long.
Total length of straight line in main road,	$3\frac{3}{10}$ miles.
Number of public ways crossed at grade,	6 crossings.
Way stations for accommodation trains,	1
Flag stations,	2
Whole number of way stations,	2
Whole number of flag stations,	1

DOINGS DURING THE YEAR.

Miles run by passenger trains,	13,585
Total miles run,	13,585
Number of passengers carried in the cars,	48,546
Number of passengers carried one mile,	242,730
Number of tons of merchandise carried in the cars,	18,016
Number of passengers carried one mile to and from other roads,	86,477
Rate of speed adopted for express passenger trains, including stops,	15 miles.
Average rate of speed actually attained by express passenger trains, including stops and detentions,	18 miles.

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, exclusive of wooden bridges, and renewals of iron, - - -	$2,199.99	
For wages of watchmen, average per month, $37.50.		
Number of men employed, exclusive of those engaged in construction, -		11
Loss and damage of goods and baggage,	15.00	

MOTIVE POWER AND CARS.

For repairs of locomotives, - -	840.28	
For new locomotives to cover depreciation, - - - -		
For repairs of passenger cars, -		
Number of engines, - - -		2
Number of passenger cars, -		2
Number of baggage cars, - -		1

MISCELLANEOUS.

For fuel used by engines during the year, viz:—	2,556.21
Coal, - - - -	132.20
For oil used by cars and engines, -	151.50
For waste and other material for cleaning, - - - -	121.86
For salaries, wages, and incidental expenses chargeable to passenger department, - - -	5,679.76
For salaries, wages, and incidental expenses chargeable to freight department, - - - -	
For gratuities and damages, -	7.87
For taxes and insurance, - -	2,936.12
For repairs of station buildings, acqueducts, fixtures, furniture, - -	211.91
For interest, - - -	4,377.17
Total expenditures for working the road,	21,480.69

INCOME DURING THE YEAR.

For Passengers:		
On main road, including branches owned by company, - - -	$12,970.88	
For Freight:		
On main road and branches owned by company, - - - -	16,186.29	
U. S. Mails, - - -	391.54	
Rents, $672.75; expresses, $160.00; other items, $33.06, - -	865.81	
Total income, - - -	30,414.52	
Net earnings, after deducting expenses,	8,933.83	

DIVIDENDS.

8 per cent. total on $29,000 preferred stock, - - - -	2,320.00	
Surplus not divided, - -		none.
Surplus last year, - - -		none.
Total surplus, - - -		no surplus.

GEO. TALCOTT, *President.*

STATE OF CONNECTICUT, TOLLAND COUNTY, } ss.
VERNON, January 23, A. D., 1868.

Personally appeared Geo. Talcott, signer of the above report, and made oath to the truth of the same, according to his best knowledge and belief, before me,

BENEZET H. BILL,

Justice of the Peace.

NEW YORK, HOUSATONIC AND NORTHERN RAILROAD.

Return of the New York, Housatonic and Northern Railroad, under the Act of 1853, *for the Year ending September* 30*th*, 1867.

Capital Stock,	$1,000,000.00	
Increase of Capital Stock, since last Report,	none.	
Capital paid in, per last Report,	110,820.00	
Capital paid in, since last Report,	82,840.00	
Total amount of Capital Stock paid in,	193,660.00	
Funded debt, per last Report,	none.	
Funded debt, paid since last Report,		
Funded debt, increase of, since last Report,		
Total present amount of funded debt,		
Floating debt, per last Report,	19,200.00	
Floating debt, paid since last Report,	19,200.00	
Floating debt, increase of, since last Report,	10,024.14	
Total present amount of floating debt,	29,224.14	
Total present amount of funded and floating debt,	29,224.14	
Average rate of interest, per annum, paid during the year,		7 per cent.

COST OF ROAD AND EQUIPMENT.

For graduation and masonry, per last Report,	$36,893.90
For graduation and masonry, paid during the past year,	41,569.03
Total amount expended for graduation and masonry,	78,462.93
For wooden bridges, paid during the past year,	655.23
Total amount expended for wooden bridges,	655.23
For superstructure, including iron, per last Report,	69,030.52
For superstructure, including iron, paid during the past year,	8,878.83
Total amount expended for superstructure, including iron,	77,909.35
For stations, buildings and fixtures, paid during the past year, (tools, &c.,)	87.90
Total amount expended for stations, buildings and fixtures, (tools, &c.,)	87.90
For land, land damages and fences, per last Report,	8,527.30
For land, land-damages and fences, paid during the past year,	7,478.59
Total amount expended for land, land-damages and fences,	16,005.89
For locomotives per last Report,	nothing.
For locomotives paid during the past year,	
Total amount expended for locomotives,	
For passenger and baggage cars, per last Report,	
For passenger and baggage cars, paid during the past year,	
Total amount expended for passenger and baggage cars,	
For merchandise cars, per last Report,	
For merchandise cars, paid during the past year,	321.48

Total amount expended for merchandise cars, - - - - - -	$321.48
Total amount expended for engineering, and for agencies and other expenses, per last Report, - - - -	27,428.10
Total amount expended for engineering and agencies and other expenses, -	43,217.36
Total cost of road and equipments, -	216,660.14

CHARACTERISTICS OF ROAD.

Length of road, - - - - -	$39\frac{75}{100}$ miles, of which $16\frac{18}{100}$ miles, are in the State of Connecticut.
Length of single main track, now laid,	about 5 miles.
Weight of rail, per yard, in main road,	58 and 60 pounds.

GEO. W. MEAD, *President.*

STATE OF NEW YORK,
CITY AND COUNTY OF NEW YORK. } SS.

George W. Mead, being duly sworn, deposes and says, that he is the President of the New York, Housatonic and Northern Railroad Company, and that the foregoing report by him subscribed is true, to the best of his knowledge, information and belief.

GEO. W. MEAD.

Sworn before me this
day of January, 1868. }

THOMAS F. GOODRICH,
Notary Public.

BOSTON, HARTFORD AND ERIE RAILROAD.

Return of the Boston, Hartford and Erie Railroad, under the Act of 1853, *for the year ending November* 30*th*, 1867.

Capital Stock,	$20,000,000.00	
Increase of capital, since last Report,	148,840	
Capital paid in, per last Report,	11,877,000.00	
Capital paid in, since last Report,	3,007,000.00	
Total amount of capital stock paid in,	14,884,000.00	
Funded debt per last Report,	8,201,350.00	
Funded debt, paid since last Report,	none.	
Funded debt, increase of, since last Report,	492,000.00	
Total present amount of funded debt,	8,693,350.00	
Floating debt, per last Report,	47,980.00	
Floating debt, paid since last Report,	47,980.00	
Floating debt, increase of, since last Report,	1,633,056.97	
Total present amount of floating debt,	1,633,056.97	
Total present amount of funded and floating debt,	10,326,406.79	
Average rate of interest, per annum, paid during the year,		8 per cent.

COST OF ROAD AND EQUIPMENT.

For graduation and masonry, per last Report, - - - - -	$7,787,906.78	
For graduation and masonry, paid during the past year, - - -	127,530.90	
Total amount expended for graduation and masonry, - - - -		$7,915,437.68
For wooden bridges, per last Report,	415,903.72	
For wooden bridges, paid during the past year, - - - - -	9,618.26	
Total amount expended for wooden bridges,		425,521.98
Total amount expended for iron bridges, (if any,) - - - - -	None.	
For superstructure, including iron, per last Report, - - - - -	1,211,157.39	
For superstructure, including iron, paid during the past year, - - -	68,125.31	
Total amount expended for superstructure, including iron, - - - -		1,279,282.70
For stations, buildings and fixtures, per last Report, - - - - -	141,151.64	
For stations, buildings and fixtures, paid during the past year, - - -	29,956.26	
Total amount expended for stations, buildings and fixtures, - - -		171,107.90
For land, land-damages and fences, per last Report, - - - - -	1,001,538.55	
For land, land-damages and fences, paid during the past year, - - -	31,928.45	
Total amount expended for land, land-damages and fences, - - -		1,033,467.00
For locomotives per last Report, -	233,317.41	
Total amount expended for locomotives,		233,317.41
For passenger and baggage cars, per last Report, - - - - -	37,669.62	
Total amount expended for passenger and baggage cars, - - - -		37,669.62
For merchandise cars, per last Report,	141,908.84	
Total amount expended for merchandise cars, - - - - - -		141,908.84

For engineering, per last Report,	$129,344.97	
For engineering, paid during the past year,	13,020.20	
Total amount expended for engineering,		$142,365.17
For agencies and other expenses, per last Report,	1,820,914.49	
For agencies and other expenses, paid during the past year,	6,038,088.23	
Total amount expended for agencies and other expenses,		7,862,002.72
Total cost of road and equipments,		$19,242,081.02

CHARACTERISTICS OF ROAD.

Length of road,	111 miles.
Length of single main track,	108¼ miles.
Length of double main track,	2¾ miles.
Length of branches owned by the company, stating whether they have a single or double track,	19½ single.
Aggregate length of siding, and other tracks, excepting main track and branches,	51,143 feet.
Weight of rail per yard, in main road,	50 to 63 lbs.
Weight of rail per yard, in branch roads,	50 to 63 lbs.
Maximum grade, with its length, in main road,	59.66 feet per mile for 8,300 feet.
Maximum grade, with its length, in branch roads,	66.— feet per mile for 900 feet.
Total rise and fall in main road,	2,305.7 feet.
Total rise and fall in branch roads,	310 feet.
Shortest radius of curvature, with length of curve, in main road,	951 feet radius for 1,350 feet.
Shortest radius of curvature, with length of curve, in branch road,	995 feet radius for 1195 feet.
Total degrees of curvature in main road,	1920° 52′
Total degrees of curvature, in branch road,	796° 15′
Total length of straight line, in main road,	60.96 miles.
Total length of straight line in branches,	7.66 miles.
Whole length of road unfenced on both sides,	20 miles.
Number of public ways crossed at grade,	90
Number of railroads crossed at grade,	1
Way stations for accommodation trains,	35

Flag stations,	12
Whole number of way stations,	35
Whole number of flag stations,	12

DOINGS DURING THE YEAR.

Miles run by passenger trains,	191,891
Miles run by freight trains,	83,782
Miles run by other trains,	21,964
Total miles run,	297,637
Number of passengers carried in the cars,	938,335
Number of passengers carried one mile,	9,582,938
Number of tons of merchandise carried in the cars,	102,314
Number of tons of merchandise carried one mile,	2,532,317
Number of passengers carried one mile, to and from other roads,	2,371,501
Number of tons carried one mile, to and from other roads,	918,071
Rate of speed adopted for express passenger trains, including stops,	No Express trains.
Rate of speed adopted for accommodation trains,	25 miles per hour.
Rate of speed actually attained by accommodation trains, including stops and detentions,	25 miles per hour.
Average rate of speed adopted for freight trains, including stops and detentions,	10 miles per hour.
Estimated weight in tons of passenger cars, (not including passengers) hauled one mile,	6,374,208
Estimated weight in tons of merchandise cars, (not including freight) hauled one mile,	4,378,941

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, exclusive of wooden bridges, and renewals of iron,	$70,760.60
Repairs of wooden bridges,	5,937.15
For wages of switchmen, average per month, $47.56,	10,485.55
For wages of gate-keeper, average per month, $48.62,	
For wages of signal-men, average per month, $39,	
For wages of watchmen, average per month, $52,	

Number of men employed, exclusive of those engaged in construction, - -		396
For removing ice and snow, (this item to include all labor, tools, repairs, and extra steam-power used,) - -		$3,037.50
For repairs of fences, gates, houses for signal-men, gate-keepers, switchmen,		205.08
Total for maintenance of way, - -		90,425.88

MOTIVE POWER AND CARS.

For repairs of locomotives, - - -	$25,759.97	
For new locomotives to cover depreciation, - - - - -	13,716.29	
For repairs of passenger cars, - -	7,954.70	
For new passenger cars to cover depreciation, - - - - - -	19,751.00	
For repairs of merchandise cars, -	8,157.80	
For new merchandise cars to cover depreciation, - - - - -	10,032.28	
For repairs of gravel and other cars,	6,913.83	
Total for maintenance of motive power and cars, - - - - -		$92,285.87
Number of engines, - - -		18
Number of passenger cars, - - -		12
Number of baggage cars, - -		4
Number of merchandise cars, - -		60
Number of gravel cars, - - -		114

MISCELLANEOUS.

For fuel used by engines during the year, viz: - - - - -	$17,867.27
Wood, - - - - - -	39,555.00
Coal, - - - - - -	
For oil used by cars and engines, -	5,434.12
For waste and other materials for cleaning,	1,601.69
For salaries, wages and incidental expenses, chargeable to passenger department,	48,062.96
For salaries, wages and incidental expenses, chargeable to freight department,	45,750.37

For gratuities and damages,	$1,255.90	
For taxes and insurance,	22,203.01	
For ferries,	Nothing.	
For repairs of station buildings, acqueducts, fixtures, furniture,	3,647.18	
For interest,	11,687.67	
For amount paid other companies, in tolls for passengers and freight carried on their roads, specifying each company, Boston and Worcester,	32,727.53	
For salaries of president, treasurer, superintendent, law expenses, office expenses of the above officers, and all other expenses not included in any of the foregoing items,	17,990.39	
Total expenditures for working the road, not including interest,		$318,807.17

INCOME DURING THE YEAR.

For passengers :—

On main road, including branches owned by company,	$134,281.22	
To and from other roads, specifying what, Boston and Worcester,	52,979.84	
Providence and Worcester,	382.60	

For freight :—

On main road and branches owned by company,	139,825.82	
To and from connecting roads,	36,184.03	
U. S. Mails,	5,923.59	
Total income,		$369,577 10

DIVIDENDS.

per cent. total,	none.
Surplus not divided,	none.
Surplus last year,	none.
Total surplus,	none.

ESTIMATED DEPRECIATION BEYOND THE RENEWALS, VIZ:

Roads and bridges, - - - -	none.
Buildings, - - - - -	none.
Engines and cars, - - - -	none.

The above is a copy of Report sent Massachusetts Legislature, as signed by Directors of B. H. & E. R. R. Co.

H. S. BARRY,
Assistant Treasurer.

CANAL RAILROAD.

Return of the Canal Railroad, leased and operated by the New York and New Haven Railroad Company, between New Haven and Granby, under the Act of 1853, *for the year ending December* 31*st*, 1867.

CHARACTERISTICS OF ROAD.

Aggregate length of wooden truss bridges, - -	600 feet.
Aggregate length of all other wooden bridges, - -	1,385 feet.
Number of public ways crossed at grade, - -	83
Number of railroads crossed at grade, - - -	1
Way stations for accommodation trains, -	14
Flag stations, - - - - -	5
Whole number of way stations, - - -	14
Whole number of flag stations, - - - -	5

DOINGS DURING THE YEAR.

Miles run by passenger trains, - - -	37,454
Miles run by freight trains, - - -	65,473
Miles run by other trains, - - - -	10,063
Total miles run, - - - - -	112,954
Number of passengers carried in the cars, - -	148,043
Rate of speed adopted for accommodation trains,	20 miles per hour.
Rate of speed actually attained by accommodation trains, including stops and detentions,	20 miles per hour.
Average rate of speed adopted for freight trains, including stops and detentions, - - -	12 miles per hour.

For repairs of road, maintenance of way, exclusive of wooden bridges, and renewals of iron, - - - -	$33,544.60
Repairs of wooden bridges, - -	3,404.69
For renewals of iron, including laying down, - - - - - - -	21,250.00
For wages of signal-men, average per month, - - - - - -	41.60
For wages of watchmen, average per month, - - - - - -	39.00
Number of men employed, exclusive of those engaged in construction, - -	70
For removing ice and snow, (this item to include all labor, tools, repairs, and extra steam-power used,) - -	4,005.19
For repairs of fences, gates, houses for signal-men, gate-keepers, switchmen, tool houses, - - - - -	699.63
Total maintenance of way, - -	62,904.11
Loss and damage of goods and baggage,	272.92
Damages for injuries to persons, - -	82.60

MOTIVE POWER AND CARS.

For repairs of locomotives, - - -	$9,661.24	
For rent of locomotives, - - -	5,110.00	
For repairs of passenger cars, - -	1,029.30	
For repairs on merchandise cars, -	1,447.09	
Total for maintenance of motive power and cars, - - - - -	17,247.63	
Number of engines, - - -		3
Number of passenger cars, - - -		6
Number of baggage cars, - -		2
Number of merchandise cars, - -		54

MISCELLANEOUS.

Oct. 4, struck a horse about 1½ miles above N. Haven.

For fuel used by engines during the year, viz:

Wood, - - - - - -	$5,826.05
Coal, - - - - - -	17,815.50
For oil used by cars and engines, -	2,754.06
For waste and other materials for cleaning,	1,216.70

For salaries, wages and incidental expenses, chargeable to passenger department,	$47,885.81
For salaries, wages and incidental expenses, chargeable to freight department,	
For taxes,	35.00
For repairs of station buildings, acqueducts, fixtures, furniture,	2,078.33
For salaries of president, treasurer, superintendent, law expenses, office expenses of the above officers, and all other expenses not included in any of the foregoing items,	1,759.99
Total expenditures for working the road,	159,878.70

May 1st, John Paradise, was injured in the hand, in attempting to couple freight cars together, not serious, amount paid for attendance, $51.00.

Oct. 19th, Fred. A. Larabee, was slightly injured in the chest, by being caught between the cars in attempting to couple them, amount paid for attendance, $31.60.

INCOME DURING THE YEAR.

For Passengers:—	
On main road, including branches owned by Company,	$74,356.22
For Freight:—	
On main road and branches owned by Company,	189,454.57
U. S Mails,	4,075.00
Express,	1,500.00
Total income,	269,385.79

P. DENNIS,
General Agent.

THIRD ANNUAL

REPORT

OF THE

COMMISSIONER OF INSURANCE,

TO THE

LEGISLATURE OF CONNECTICUT,

MAY SESSION, 1868.

Printed by Order of the Legislature.

NEW HAVEN:
THOMAS J. STAFFORD, STATE PRINTER.
1868.

REPORT.

To the General Assembly of the State of Connecticut,
May Session, A. D. 1868:

With the increase of the business of Insurance, there is a corresponding desire on the part of Insurers, to know what amount and kind of assets are held by the companies, to respond to their liabilities.

As a matter of course, the per cent. of assets on the amount insured, must be small—hence the importance of good management. The taking of risks depends so much upon the judgment of agents, it becomes more and more important to select able men for this class of employés.

It has been the policy of Connecticut to look after its own Insurance Companies, by requiring them to report directly to your Honorable Body, that you may know the annual status of each company, and interpose your authority, in case any one company requires it. This feature of legislative action has tended directly to keep up a high standard of integrity and good management on the part of the institutions, and this has given to the Insurance Companies of this State a great reputation in other States, as is evidenced by the enormous patronage they receive abroad.

Not so with the Insurance Companies of some other States, for in many cases their companies are founded upon capitals not paid in money; therefore they hazard much to acquire a little, and they rush into such States as they can enter without restraint, and the holders of their policies, when losses occur, are often embarrassed and delayed in the collection of their Insurances.

As the Legislature of this State takes care of the companies it creates, they assigned to your Commissioner the duty of enforcing its laws relating to such companies as are chartered by other States, and desire to transact business in this State.

In the discharge of these duties, your Commissioner has endeavored to protect the citizens of this State, by a careful examination into the affairs of every company he found transacting business in the State, and when the fiscal year was closed, to exclude such as appeared to be unworthy of public confidence, and by the enforcement of the rules of the Department and laws of the State, to keep out of the State thereafter all such as he deemed to be unreliable.

This action has caused the disappearance of several Insurance Companies from the State. But it has not been accomplished without some trouble to your Commissioner. In one instance he was prosecuted for his official action, and subjected to annoyance and expense; this however did not restrain the discharge of duty, and the State was relieved of what proved to be an unreliable company.

FIRE INSURANCE COMPANIES.

At the present time there are fifty-one Fire Insurance Companies incorporated by other States, doing business in this State under Certificates of Authority from this Department.

These Institutions are sustained by capitals amounting to $18,400,000, and they have also in earned and unearned premiums, interest, &c. the further sum of $15,403,500, making in gross assets $33,808,590, all of which are held liable for insurances amounting to $1,921,481,127.

The several balance sheets exhibit the manner in which these items are distributed among the companies, every one of which is believed to be sound and worthy of public confidence.

The severe losses of 1866 were not repeated in full measure last year, therefore Fire Insurance Companies now present a better state of finances; but losses are still very heavy, and some means should be devised to either diminish fires, or avoid insurances which seem now to be too freely taken.

At first, these two points seem to be hard to control, and they are, but at the same time they can be greatly improved.

The introduction of water into villages and cities for the purpose of putting out fires, is being appreciated slowly, and although water works were at the beginning very imperfectly constructed, they are far better than none.

The delay almost always experienced in applying water to fires, is the greatest source of disaster; any Fire Department which relies for water on water hydrants having little or no head, must prove very inadequate, and a great drawback to the chances of partial losses.

An early bucket of water is always worth more than barrels applied later; so water works which are constructed with a high head to draw from fire hydrants at once, without the delay of alarming either hand or Steam Fire Engine Companies, will do more to prevent large and disastrous fires, than any other mode which can be devised.

Very many Insurance Companies count upon partial, instead of total losses, in cases of fires, so that while they admit the hazard or extra hazard, they also estimate the chances of partial loss, and as very many agents omit to estimate the effect of the defective means for putting out fires, and the *moral hazard* connected with risks which they take, losses are still very heavy.

Besides, such a system of protection involves, to towns and cities, double expenses in their Fire Department. Even the Croton Reservoir of New York is too low by more than fifty feet, as is evidenced by the fact that fire hydrants are relied upon merely to supply steamers, and by the fact that when the lower part of the city is in active business during the day, and using more or less water for miscellaneous purposes, few houses in the central and upper portion of the city can draw water in the second and upper stories.

Deficiency of size in the main and distributing pipes, also contributes to large fires, for the more such pipes are drawn from, the weaker the head, until finally the pipes amount to but little more than mere conductors of water.

In view of these simple facts, it is very extraordinary that Fire Insurance Companies and their stockholders do not interpose their experience, and interest themselves in the subject of the supply and application of water to fires; if they would, they might dispense with many expensive arrangements of their own, made necessary in consequence of the defects to which we have referred, and thus be the means of entirely revolutionizing the system of protection from fires, and at the same time ensuring larger dividends to their stockholders.

Before dismissing this subject, it is not irrelevant to refer to the city of Middletown, in this State, as possessing as perfect a set of water-works connected with fires, as almost any city in the country.

The water head is 225 feet above the main street, and fire hydrants are located on the corners of the streets; in places of four corners, with double fire hydrants, they can attach fire hose and throw eight streams of water at the same time 100 feet high, and they say that they have no farther use for fire engines in the city.

The city of Middletown, N. Y., is also supplied with similar water-works, which will enable them to dispense with fire engines, for each hydrant will throw water directly upon the fire without the aid of an engine.

The towns of New Britain and Danbury, in this State, are also supplied in the same manner, and the city of Hartford has finally abandoned the Connecticut River and gone a few miles into the country, where from small streams they acquire a water-head of more than 160 feet.

The city of New Haven is supplied by a Water Company which has prevented many disasters, and added much to the safety of property—besides affording some water for power to light machinery.

Other places in various parts of the country are turning their attention to this new feature of protection, especially as it has now been demonstrated by the places named, and by recent experiments elsewhere, that small streams on mountain ranges, are the localities which time will establish, for supplying water to cities, towns and villages for domestic purposes, and for power connected with light machinery and the fire department.

The larger the city the greater the necessity for a perfect system of water-works. The city of Philadelphia is about to construct new water-works and abandoning the Schuylkill River and their pumps and machiney, and resorting to country streams, which, like other high, clear, and rapid mountain streams afford the best water in the world, resting as they do on trap and sandstone rock.

In short, it is now an established fact, that almost any city or compact town can establish water-works which will pay the interest on the cost, by furnishing water to water motors, for light machinery, leaving at the same time power by day, and especially by night, free for protection against fire, without cost.

In all cases where the water head creates power to a water hydrant, equal to a steam fire engine, such hydrant is equal to a fire engine, and better too, for it furnishes its own power and water, and saves the cost of the steamer, fuel, &c., besides the hydrant is always ready day or night, the instant the water is needed.

These remarks are drawn from a late report of the Philadelphia Water Commissioners, who recommend the adoption of the high-land country streams, and the impounding of water in rocky ravines, through which the streams pass to the lower levels.

The gross receipts for premiums of the fifty-one Fire Insurance Companies doing business in this State, were, for the year 1867, $21,425,764, and their losses paid amounted to $13,180,544.

By reference to the exhibit on another page, it will be seen how each Company stands comparatively, and the improvements accomplished since the report of last year, for nearly all of the companies have acquired a surplus, over capital, losses, and reinsurance.

MARINE INSURANCE COMPANIES.

This branch of Insurance is practiced only to a limited extent by the Insurance Companies embraced in this Report, with two exceptions, and no particular reference need now be made to them.

So far as your Commissioner is informed on this subject, it would appear that many vessels are insured which are unseaworthy, although extraordinary measures are taken to test the soundness of hulls, rigging, &c. It is very evident that many vessels go to sea imperfectly supplied with chains, anchors, pumps, life-boats, spars and men, and that disasters, and the loss of life, can be largely traced to these deficiencies. This opinion is sustained in part, at least, by the two tables of Steamers lost during the last ten years.

At the close of the last session of the Legislature a law was passed to establish a uniform policy for the use of all the Fire Insurance Companies doing business in this State, the conditions of which were to be approved by your Commissioner. After some delay, action was taken upon the subject, and a form was finally decided upon, but so general was the disapproval of the Fire Insurance Companies of this State, and so conflicting were the opinions of lawyers as to the interpretation of the law, your Commissioner did not deem it to be his duty to do more than to provide a form, and recommend its adoption; indeed, this was doing all, if not more, than the law required.

The discontent was not surprising, for no two of all the companies used the same form of policy, and each one thought their own the best in use.

The repeal of this law, and the adoption of a new one, requiring that all the conditions of insurance shall be embraced in the policy, over the signatures of the officers, it is believed by your Commissioner, would meet the case, especially as there is now in progress an effort on the part of the Fire Insurance Companies of the United States to establish a uniform policy for use in all the States.

LIFE INSURANCE.

The progress of Life Insurance is very rapid at the present time, indicating extraordinary activity on the part of solicitors and agents, to whom large allowances, as commissions and fees, for the services they render, are paid.

That the rate of premiums, under the ordinary tables of Life Insurance Companies, are high enough to justify these extra expenses, there is no doubt, but while maintaining such heavy expenses as they are now under, that it is wise to declare such large dividends as some do, may be questioned.

There are at the present time twenty-six Life Insurance Companies incorporated by other States, doing business in this State, under certificates of authority from this department.

All but six have specific capitals, amounting to $2,390,000; their gross assets amount to the sum of $76,389,583, of which there is unrealized, in *commuted commissions*, *dues from agents and premiums not yet collected*, *quarterly and semi-annual premiums not yet due*, *advance in the market value of U. S. Securities and Bonds and Stocks*, in all, a sum not less than $24,748.200.

The liabilities of these companies for policies in force amount to $505,133,793, and their outstanding dividends, in various forms, amount to over $20,000,000.

So few of these institutions adopt the same rules and regulations in declaring and paying dividends, no general observations will apply to them; therefore, so far as they are commented upon, such comments must seem to be more personal than it is desirable in official reports.

That these Life Insurance Companies are sound and reliable, cannot be doubted; that they will prosper, is almost equally certain, but such policy holders as believe that Life Insurance Companies can be conducted and perpetuated without absorbing, annually, a part of the premiums paid in, either deceive themselves or allow others to do it.

It is true, that now and then losses will favor the company, by falling below the expected annual average; but sooner or later losses will overtake the company, and each company should keep its accumulations advancing, in order to meet the mortality which time is sure to bring upon them.

The most favorable system of dividends for both the companies and the insured would seem to be that which leaves the dividends with the company, as an addition to the amounts insured, to become a part of the policy and payable with it.

For instance, a person 30 years of age, insured for life, for $2,000, and paying a premium in cash annually of $45.40, would in three years pay $136.20 in premiums—if at the end of this three years, the company declared a cash dividend on the premiums paid in, of, say 10 per cent., the person would be entitled to draw out $13.62 as his dividend for the three years.

But suppose this dividend, instead of being drawn out of the company, is left in its treasury for accumulation, to be paid with the policy at death. In this case the person being three years older than when insured, he is 33 years of age, and is expected, by the Carlisle Tables of the expectation of life, to live 32 years more. This $13.62 left with the company, and compounded for the 32 years that the person is expected to live, calling interest 5 per cent. per annum, would, at the end of this time, amount to $65.00, and this amount, added to the amount insured, makes the policy, at death, worth $2,065; this process being repeated every three years, would gradually swell the policy to a handsome amount.

For instance, at the end of the second three years, there being a similar dividend of $13.62, having 29 years to be compounded with the company, would make another addition to the policy, payable at death, of $57.00, and so on, in regular succession to the last, making, say ten triennial dividends of $13.62, each of which, being compounded for the balance of the term, up to the end of the 32 years of expectation of life, the gross amount of dividend additions to the policy would be

$366.92, which being added to the amount of the policy, $2,000, would make the gross amount to be paid at death, as $2,366.58, instead of the $2,000 originally insured.

This is one view of the case, under a system of cash payments for premiums, and cash triennial dividends converted into dividends payable at death, supposing the same not to occur until the time named, which is an average time. [True, one may die before attaining the additional years of expectation of life, but it is also true that another may exceed the years named as the average, so that the average is preserved after all, and is reliable.]

Another case may be stated as follows :—a person 30 years of age insures for $2,000, and is charged annually in cash $45.40. At the end of each three years he is entitled to a dividend of 50 per cent. on the premiums he has paid as an addition to his policy, payable with the policy at death.

Assuming that the person will live out his expectation of life and then die—or rather that he represents an average case—he will receive ten dividends, amounting in all to one half of the premiums he has paid, or rather, as is more commonly expressed, he gets 50 per cent. dividends. These dividends, if declared triennially, will amount to $681.00 ; or in case the dividends were annually made, he would get the advantage of two more payments, and the dividends would amount to $771.80—thus the insured would, in the end, have the benefit of 50 per cent. annual dividends, and receive at death $2,771.80.

Another view of the case is this : a company may reduce its rates of premium, and also pay cash dividends triennially ; for instance, charge a premium of $35.60 annually, instead of $45.40 for a policy, for life, to a person 30 years of age, insured for $2,000.

The annual reduction is $9.80. In case the company declares no dividends at all, this annual reduction, compounded for the 33 years the insured is expected to live, at 5 per cent. interest, will amount to $724.58, which, in this form, is a simple saving, and if set aside and added to the amount insured, would make the whole insurance, at the end of the 33 years, equal to $2,724.58, and in case the company declares a dividend triennially, of, say only 6 per cent. on the amount of premiums paid, and adds the same to the policy at its estimated worth at death. Compounded at five per cent. interest, the further addition to the policy would be as follows: $6.28 triennially, compounded at the rate of 5 per cent. annually, would, in the whole term of 32 years he is expected to live, amount to the sum of $167.77, which sum being added to the reduction fund saved, of $724.58, would amount to $892.35. In other words, an insurance of $2,000 for life, to a person whose age was 30 years, and who could reasonably be expected to accomplish his full allotted term of life, would amount in annual savings and dividends compounded, in regular succession at 5 per cent. per annum, to $2,892.35, as follows: the sum of $724.58, actually deducted from the premiums, and the gross value of dividends, $167.77, making the policy of $2,000 equal to $2,892.35 at the termination of the expectation of the life of the person insured at 30 years of age.

As regards the two last plans, the one with high premiums and fifty per cent. dividends, produces the final sum of $2,771.80; and the second, with reduced premiums and small dividends, produces an equivalent of $2,892.35, showing a difference of $120.55 as between the two plans named, in favor of the last plan.

The two plans may be said to illustrate the difference between the largest and one of the smallest Life Companies in the country, of comparative ages: the former company is liable for $179,239,926 for policies and dividends thereto, and possesses in gross assets $23,994,000, which is 13½ per cent. of assets on its liabilities; while the latter company is liable for $2,650,000 for policies and dividends, and possesses in gross assets $495,000, which is 19 per cent. on its liabilities.

This comparison is not made for any purpose except to show that an account must be made up both ways, and explained, to show the comparative advantage of any plan of Life Insurance; the comparison also shows a per centage in favor of the small Company, though on a different basis and under different modes of management. The expenses of these modes must be as carefully analyzed and understood, as have been the premium and dividend accounts, to finally determine which of all the various plans is the best for the insured.

It is of very little consequence which plan of Life Insurance any one person may approve, for human judgment is very frail, and is swayed this way or that by circumstances; therefore as no tables of premiums of Life Insurance now in use are unsafe for the insured, each person had better be satisfied with the company he has elected, or has been persuaded into; for the various plans and schemes of Life Insurance are, as we have said before, like the various routes from New York to Boston: they start about the same time, travel over about the same distance, arrive about the same time, and cost the traveler about the same amount of money—cost, in time and money they will; so in Life Insurance, no scheme or plan of Life Insurance can return to the insured more money, or as much as they pay to the company—and as often as agents or companies represent to the public that *all* of the insured can draw out of a Life Insurance Company more than they pay in, such agents or companies may be regarded as not telling the truth.

The annual cost of conducting a Life Insurance Company is great,—for salaries, printing, stationery, advertising, rents, commissions, taxes, and other contingent expenses are very heavy, and when all of these items are added to the losses, (most of which occur on policies which have paid in only a small part of the amounts they draw out,) the annual tax or expense on each year's receipts necessarily impairs and reduces them, and only a part of the same is left to go to interest, and aid towards after years of expenses and losses.

In regard to the standard rates of interest to be adopted in making calculations for Life Insurance Companies in the United States, but little need be said; for while it is well known that six per cent. per annum is the lowest legal standard of any State, and runs up to 10 per cent. and more in many States, it is a retrograde movement to introduce English standards, or to try and drive American Life Insurance Companies down to English rates of interest.

There seems to be a determination to force upon American Life Insurance Companies the low standard of English Life Insurance tables, based upon 4 or 5 per cent. of interest. Such an effort indicates a singular theory of financial affairs in the United States; for though money is more plenty than ever before, the Nation, the States, and most of the cities and towns are borrowers, and very little money is borrowed as low as six per cent. per annum, and billions are and will be borrowed by the States, and by individuals on improved real estate, at rates varying from seven to ten per cent. per annum; besides, those who borrow at National Banks pay at the rate of eight per cent. per annum, including what is called exchange or undrawn deposits, and no moneyed corporation lends without the borrower pays the money taxes, be it lent to the State or to the individual borrower.

So long as the vast territory of the United States requires money, it will command a high rate of interest, and the attempt to adjust Life Insurance in this country on a basis of interest on money, common on the island of Great Britain, where it is a drug, is as absurd as would be the attempt to adjust a republican form of government on the basis of crown titles and entailed estates.

It may be said comparatively, that *while Great Britain is finished*, the *United States are but just commenced*, and that money will command, for the next hundred years, on an average, not less than seven per cent. per annum interest.

As a matter of course, the *less* the rates of interest, the *greater* the annual premium must be; and the *greater* the rate of interest, the *less* the premium fund, and the fund on which annuities rest.

Was not this last suggestion well founded, the largest Life Company in this State, and such companies as have followed (as far as they could) their example, could not practice life insurance so liberally. They avail themselves of the highest American standards of interest and the best of security.

When the State of New York reduces its legal standard of interest down to 5 per cent. per annum, and can fund its own debt at five per cent. per annum, and other States and the Nation can fund their debts at the same rate, it would seem reasonable to force Life Insurance Companies down to that rate of interest in making computations, but such an event is so far in the future, as to exonerate any anxious official from all responsibility for the hereafter in this particular.

The Life Insurance Companies of this State are prospering, by reason of patronage at home and in other States. Indeed, at the present time their success in other States seems greater than that of the local companies of any other State.

REVENUE TO THE STATE.

On assuming the duties of office, your Commissioner found that the State derived an income for licenses, and taxes on the premiums collected by agents of Insurance Companies of other States, the sum of $3,522.41

In 1865 it was increased to	5,401.16
In 1866 it was increased to	6,826.99
In 1867 it was increased to	12,547.46

The duty, trouble, and expense of ascertaining and collecting these licenses and taxes devolves on the Commission, and both licenses and taxes are paid over to the State Treasurer, without any expense whatever to the State.

The Department holds each company and agent to a strict accountability, enforces the law for making annual returns and paying taxes, furnishes all printed blanks, pays for the printing and postages, and sees to it that the money is paid over to the Treasurer.

Since the law of the State required the payment of a tax of two per cent. in all cases on Fire Insurance premiums collected by the companies of other States, it has induced retaliatory action in other States ; your Commission, therefore, recommends that the subject and the law be considered for the collecting of taxes on Fire Insurance premiums collected in this State, and be made reciprocal with other States, if deemed expedient.

The same suggestion was made last year, but no action was had on the subject, from the fact no doubt that up to that time the effect of the law had not been realized by the Insurance Companies of this State. In case, however, the State diminishes its income, to accommodate the interests of its own Insurance Companies, the amount should in some manner be made good to them by the class of Insurance Companies favored by any modification of the law.

STATEMENT OF THE CONDITION

OF THE

FIRE INSURANCE COMPANIES

FROM OTHER STATES,

TRANSACTING BUSINESS IN THE STATE OF CONNECTICUT.

Statement of the Ætna Fire Insurance Company, New York City, as condensed from their reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$300,000.00
Accumulations and Balances treated as Assets,	103,338.72
Whole amount of Assets,	$403,338.72

ASSETS.

Amount of Cash on hand and in Banks,	$17,912.58
Real Estate owned by the Company,	
Loans on Real Estate,	114,600.00
Loans on Collaterals,	
Invested in Bank Stocks,	59,480.00
Invested in State, City, Town and County Securities,	900.00
Invested in United States Securities,	196,697.50
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions,	
Premium Notes,	
Due from Agents, and Premiums due, treated as Assets,	
Accrued Rents, Interest, &c.,	
All other Assets,	13,748.64
	$403,338.72

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	500.00
Dividends payable,	
Capital Stock,	300,000.00
All other Liabilities,	2,175.00
Gross Liabilities,	$302,675 00

REMARKS.

Amount of Losses paid in 1867,	$38,271 00
Amount at Risk in 1867,	17,198,208.00
Received for Premiums,	131,163.00

H. C. Beach, *Vice President.*

Charles M. St. John, *Secretary.*

Attorney, George S. Lester, New Haven.

Statement of the Agricultural Fire Insurance Company, Watertown, N. Y., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$100,000.00
Accumulations and Balances treated as Assets,	255,136.14
Whole amount of Assets,	$355,136.14

ASSETS.

Amount of Cash on hand and in Banks,	$65,836.17
Real Estate owned by the Company,	11,322.46
Loans on Real Estate,	151,136.48
Loans on Collaterals,	2,000.00
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	8,500.00
Invested in United States Securities,	47,636.25
Invested in other Stocks, Bonds and Securities,	200.00
Deferred Premiums treated as Assets,	
Commuted Commissions, as Assets,	
Premium Notes, as Assets,	
Due from Agents, and Premiums due, treated as Assets,	47,913.85
Accrued Rents, Interest, &c., treated as Assets,	5,278.95
All other Assets, Personal Securities,	14,891.98
Furniture,	420.00
	$355,136.14

LIABILITIES.

Losses and Claims acknowledged,	$1,500.00
Losses and Claims resisted,	
Losses not acted upon,	538.00
Dividends payable,	22.00
Capital Stock,	100,000.00
All other Liabilities,	
Gross Liabilities,	$102,060,00

REMARKS.

Amount of Losses paid in 1867,	$66,725.00
Amount at Risk in 1867,	256,848.20
Received for Premiums in 1867,	131,758.00

ISAAC MUNSON, *Secretary.* JOHN WINSLOW, *Vice President.*

Attorney, JOHN R. CALDWELL, Sherman.

Statement of the Albany City Fire Insurance Company, Albany, N. Y., as condensed from their Reports to January, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$200,000.00
Accumulations and Balances treated as Assets, .	151,877.42
Whole amount of Assets, ...	$351,877.42

ASSETS.

Amount of Cash on hand and in Banks, . .	$18,059.57
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	82,681.71
Loans on Collaterals, ...	34,744.89
Invested in Bank Stocks, ...	
Invested in State, City, Town and County Securities,	23,250.00
Invested in United States Securities, ...	103,989.05
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, . . .	
Commuted Commissions, ...	
Premium Notes, ...	50,365.46
Due from Agents, and Premiums due, treated as Assets,	24,623.24
Accrued Rents, Interest, &c., ... All other Assets, ...	14,163.50
	$351,877.42

LIABILITIES.

Losses and Claims acknowledged, ...	$4,002.88
Losses and Claims resisted, ...	
Losses not acted upon, ...	47,036.79
Dividends payable, ...	120.00
Capital Stock, ...	200,000.00
All other Liabilities, ...	56.00
Gross Liabilities, ...	$251,215.67

REMARKS.

Amount of Losses paid in 1867, ...	$223,882.00
Amount at risk in 1867, ...	24,743,530.00
Received for Premiums, ...	353,911.00

James Hendrick, *Vice President.*

William A. Young, *Secretary.*

Attorney, C. C. Kimball, Hartford.

Statement of the Atlantic Fire and Marine Insurance Company, Providence, R. I., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000 00
Accumulations and Balances treated as Assets,	98,126.27
Whole amount of Assets,	$298,126.27

ASSETS.

Amount of Cash on hand and in Banks,	$2,454.78
Real Estate owned by the Company,	2,600.00
Loans on Real Estate,	
Loans on Collaterals,	
Invested in Bank Stocks,	257,729.25
Invested in State, City, Town and County Securities,	21,000.00
Invested in United States Securities,	
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions,	
Premium Notes,	2,362.50
Due from Agents, and Premiums due, treated as Assets,	5,805.74
Accrued Rents, Interest, &c.,	
All other Assets,	6,174.00
	$298,126.27

LIABILITIES.

Losses and Claims acknowledged,	$12,839.74
Losses and Claims resisted,	
Losses not acted upon,	23,667.54
Dividends payable,	823.00
Capital Stock,	200,000.00
All other Liabilities,	5,686.20
Gross Liabilities,	$243,016.48

REMARKS.

Amount of Losses paid in 1867,	$102,100.00
Amount at Risk in 1867,	10,482,500.00
Received for Premiums,	124,600.00

J. S. Parish, *Secretary.* S. Mauran, *President.*

Attorney, Wm. Conner, Hartford.

tatement of the Atlantic Fire Insurance Company, Brooklyn, N. Y., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$300,000.00
Accumulations and Balances treated as Assets, .	205,530.34
Whole amount of Assets, ...	$505,530.34

ASSETS.

Amount of Cash on hand and in Banks, . . .	$21,686.86
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	50,550.00
Loans on Collaterals, ...	49,250,00
Invested in Bank Stocks, ...	29,000.00
Invested in State, City, Town and County Securities,	29,564.00
Invested in United States Securities, . . .	290,625.00
Invested in other Stocks, Bonds and Securities,	
Premiums treated as Assets, ...	7,602.55
Commuted Commissions, treated as Assets,	
Premium Notes, treated as Assets, ...	1,590.79
Due from Agents, and Premiums due, treated as Assets,	19,727.05
Accrued Rents, Interest, &c., ...	4,264.09
All other Assets, ...	
Furniture, stamps, &c., ...	1,610.00
	$505,530.34

LIABILITIES.

Losses and Claims acknowledged, ...	
Losses and Claims resisted, ...	
Losses not acted upon, ...	50,335.67
Dividends payable, ...	
Capital Stock, ...	300,000.00
All other Liabilities, ...	
Gross Liabilities, ...	$350,335.67

REMARKS.

Amount of Losses paid in 1867, ...	$249,012.00
Amount at Risk in 1867, ...	41,209,684.00
Received for Premiums, ...	281,492.00

HORATIO DORR, *Secretary.* JOHN D. COCKS, *President.*

Attorney, JUDAH FRISBIE, New Haven.

Statement of the Baltic Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000.00
Accumulations and Balances treated as Assets,	79,146.68
Whole amount of Assets,	$279,146.68

ASSETS.

Amount of Cash on hand and in Banks,	$61,441.47
Real Estate owned by the Company,	8,000.00
Loans on Real Estate,	109,950.00
Loans on Collaterals, Personal,	10,000.00
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	
Invested in United States Securities,	42,630.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions, as Assets,	
Premiums unpaid,	15,815.77
Due from Agents, and Premiums due, treated as Assets,	17,863.31
Accrued Rents, Interest, &c.,	
All other Assets,	13,446.15
	$279,146.68

LIABILITIES.

Losses and claims acknowledged,	$43,135.39
Losses and claims resisted,	
Losses not acted upon,	9,300.00
Dividends payable,	
Capital Stock,	200,00.00
All other Liabilities,	
Gross Liabilities,	$252,435.39

REMARKS.

Amount of Losses paid in 1867,	$204,825.00
Amount at Risk in 1867,	41,209,684.00
Received for premiums,	253,000.00

Wm. H. Keep, *Secretary.* Wm. S. Corwin, *President.*

Attorney, L. W. Sperry, New Haven.

Statement of the Bay State Fire Insurance Company, Worcester, Mass., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$104,800.09
Accumulations and Balances treated as Assets,	47,778.83
Whole amount of Assets,	$152,578.83

ASSETS.

Amount of Cash on Hand and in Banks,	$4,774.04
Real Estate owned by the Company,	
Loans on Real Estate,	
Loans on Collaterals,	5,000.00
Invested in Bank Stocks,	46,010.00
Invested in State, City, Town, and County Securities,	14,500.00
Invested in United States Securities,	64,641.25
Invested in other Stocks, Bonds, and Securities,	13,252.00
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	
Due from Agents, and Premiums due, treated as Assets,	1,031.12
Accrued Rents, Interest, &c., treated as Assets,	
All other Assets, treated as Assets,	3,370.42
	$152,578.83

LIABILITIES.

Losses and Claims acknowledged,	$5,542.99
Losses and Claims resisted,	
Losses not acted upon,	62.50
Dividends payable,	
Capital Stock,	104,800.00
All other Liabilities,	794.24
Gross Liabilities,	$111,099.73

L. C. Parks, *Secretary.* Wm. L. Davis, *President.*

Attorney, Thos. H. Perkins, Norwich.

Statement of the Capital City Fire Insurance Company, Albany, N. Y., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$200,000.00
Accumulations and Balances treated as Assets, .	61,460.00
Whole amount of Assets, ...	$261,460.00

ASSETS.

Amount of Cash on hand and in Banks, . .	$11,257.74
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	
Loans on Collaterals, ...	30,000.00
Invested in Bank Stock, ...	
Invested in State, City, Town and County Securities,	
Invested in United States Securities, . . .	217,110.00
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, . . .	
Commuted Commissions treated as Assets, . .	
Premium Notes treated as Assets, ...	
Due from Agents, and Premiums due, treated as Assets,	1,900.00
Accrued Rents, Interest, &c., treated as Assets, . All other Assets treated as Assets, . . .	1,192,26
	$261,460.00

LIABILITIES.

Losses and Claims acknowledged, ...	
Losses and Claims resisted, ...	
Losses not acted upon, ...	4,157,25
Dividends payable, ...	
Capital Stock, ...	200,000.00
All other Liabilites, ...	350.00
Gross Liabilities, ...	$204,507.25

REMARKS.

Amount of Losses paid in 1867, ...	$21,765.00
Amount of Risks, ...	2,855,475.00
Received for Premiums, ...	51,000.00

James F. Crosby, *Secretary.* Frank Chamberlin, *President.*
Attorney, L. W. Sperry, New Haven.

Statement of the Commerce Fire Insurance Company, Albany, N. Y., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$400,000.00
Accumulations and Balances treated as Assets,	168,873.82
Whole amount of Assets,	$568,873.82

ASSETS.

Amount of Cash on hand and in Banks,	$7,566.86
Real Estate owned by the Company,	45,000.00
Loans on Real Estate,	69,000.00
Loans on Collaterals,	70,800.00
Invested in Bank Stocks,	13,250.00
Invested in State, City, Town, and County Securities,	
Invested in United States Securities,	336,840.00
Invested in other Stocks, Bonds and Securities,	4,239.23
Deferred Premiums treated as Assets,	
Commuted Commissions, as Assets,	
Premium Notes, as Assets,	
Due from Agents, and Premiums due, treated as Assets,	17,438 81
Accrued Rents, Interest, &c. treated as Assets,	
All other Assets,	4,738.92
	$568,873.82

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	18,826,66
Dividends payable,	
Capital Stock,	400,000.00
All other Liabilities,	
Gross Liabilities,	$418,826.66

REMARKS.

Losses paid in 1867,	$182,530.00
Amount of Risks,	32,017,581.00
Received for Premiums,	313,680.00

R. M. Hamilton, *Secretary.* G. A. Van Allen, *Vice-President.*
Attorney, B. B. Wittemore, Norwich.

Statement of the condition of the Commonwealth Fire Insurance Company, of New York, as condensed from their Report made to the Commissioner of Insurance of Connecticut, to January 1st, 1868.

CAPITAL.

Amount of Capital paid in,	$250,000.00
Accumulations and Balances treated as Assets,	111,625.67
Whole amount of Assets,	$361,625.67

ASSETS.

Amount of Cash on hand and in Banks,	$14,570.78
Real Estate owned by the Company,	
Loans on Real Estate,	193,050.00
Loans on Collaterals,	17,100.00
Invested in Bank Stocks,	
Invested in State, City, Town, and County Securities,	
Invested in United States Securities,	106,000.00
Invested in other Stocks, Bonds, and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	
Due from Agents, and Premiums due, treated as Assets,	
Accrued Rents, Interest, &c., treated as Assets,	
All other Assets, treated as Assets,	30,904.89
	$361,625.67

LIABILITIES.

Losses and Claims acknowledged,	$12,000.00
Losses and Claims resisted,	
Losses not acted upon,	
Dividends payable,	
Capital Stock,	250,000.00
All other Liabilities,	
Gross Liabilities,	$262,000.00

REMARKS.

Amount of Losses paid in 1867,	$104,264.00
Amount at Risk,	26,810,141.00
Received for Premiums in 1867,	212,573.35

D. M. Doughty, *Secretary.* Geo. T. Hawes, *President.*

Attorney, Joseph F. Hanford, Bridgeport.

Statement of the Continental Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$500,000.00
Accumulations and Balances treated as Assets,	1,314,590.31
Whole amount of Assets, ...	$1,814,590.31

ASSETS.

Amount of Cash on hand and in Banks, . .	$117,812.99
Real Estate owned by the Company, . . .	150,000.00
Loans on Real Estate, ...	522,350.00
Loans on Collaterals, ...	349,600.00
Invested in Bank Stocks, ...	121,690.00
Invested in State, City, Town and County Securities, ...	62,125.00
Invested in United States Securities, . .	420,090.00
Invested in other Stocks, Bonds and Securities, .	19,200.00
Deferred Premiums treated as Assets, . .	
Commuted Commissions, ...	
Premiums due, ...	28,338.38
Due from Agents, and Premiums due, treated as Assets,	
Accrued Rents, Interest, &c., ...	20,692.29
All other Assets, ...	2,691.67
	$1,814,590.31

LIABILITIES.

Losses and Claims acknowledged, ...	$
Losses and Claims resisted, ...	7,500.00
Losses not acted upon, ...	22,059.00
Dividends payable, ...	29,957.00
Capital Stock, ...	500,000.00
All other Liabilities, ...	728.00
Scrip unclaimed, ...	33,196.16
Gross Liabilities,	$593,440.16

REMARKS.

Losses paid in 1867, ...	$285,890.00
Amount of Risk, ...	102,721,188.00
Amount of Losses paid in 1867, ...	$678,950.00
Received for Premiums, ...	

Cyrus Peck, *Secretary.* Geo. T. Hope, *President.*

Attorney, S. Hartwell, Bridgeport.

Statement of the Corn Exchange Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$400,000.00
Accumulations and Balances treated as Assets,	105,605.05
Whole amount of Assets,	$505,605.05

ASSETS.

Amount of Cash on hand and in Banks,	$2,486.32
Real Estate owned by the Company,	
Loans on Real Estate,	115,750.00
Loans on Collaterals,	3,475.00
Invested in Bank Stocks,	
Invested in State, City, Town, and County Securities,	38,208.17
Invested in United States Securities,	180,000.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	2,453.45
Due from Agents, and Premiums due, treated as Assets,	34,526.95
Accrued Rents, Interest, &c.,	128,708.16
All other Assets,	
	$505,605.05

LIABILITIES.

Losses and Claims acknowledged,	$29,225.68
Losses and Claims resisted,	
Losses not acted upon,	12,000.00
Dividends payable,	890.00
Capital Stock,	400,000.00
All other Liabilities,	
Gross Liabilities,	$442,115.68

REMARKS.

Amount of Losses paid in 1867,	240,360.00
Amount at Risk,	34,596,794.00
Received for Premiums,	340,000.00

PETER TAIT, *Acting Secretary.* R. F. MASON, *President.*

Attorney, C. B. BOWERS, New Haven.

Statement of the Enterprise Fire and Marine Insurance Company, Cincinnati, Ohio, as condensed from their Reports to January 1*st*, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$300,000.00
Accumulations and Balances treated as Assets,	235,372.78
Whole amount of Assets,	$538,372.78

ASSETS.

Amount of Cash on hand and in Banks,	$91,344.28
Real Estate owned by the Company,	87,000.00
Loans on Real Estate,	89,533.38
Loans on Collaterals,	
Invested in Bank Stocks,	
Invested in State, City, Town, and County Securities,	12,600.00
Invested in United States Securities,	100,450.00
Invested in other Stocks, Bonds, and Securities,	4,000.00
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	77,849.02
Due from Agents, and Premiums due, treated as Assets,	107,345.68
Accrued Rents, Interest, &c., treated as Assets,	
All other Assets, treated as Assets,	34,205.80
	$538,372.78

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	$63,354.49
Dividends payable,	
Capital Stock,	300,000.00
All other Liabilities,	5,600.91
Gross Liabilities,	$368,955.40

REMARKS,

Amount of Losses paid in 1867,	$400,500.00
Amount at Risk,	59,479,365.00
Received for Premiums in 1867,	781,500,00

WM. B. CASSILY, *Vice President.*

WM. M. RICHARDSON, *Secretary.*

Attorney, THOS. H. PERKINS, Norwich.

Statement of the Excelsior Fire Insurance Company, N. Y., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$200,000.00
Accumulations and Balances treated as Assets, .	144,469.46
Whole amount of Assets, ...	$344,469.46

ASSETS.

Amount of Cash on hand and in Banks, ...	$9,788.11
Real Estate owned by the Company, ...	88,700.00
Loans on Real Estate, ...	63,352.10
Loans on Collaterals, ...	94,665.00
Invested in Bank Stocks, ...	
Invested in State, City, Town and County Securities,	1,100.00
Invested in United States Securities, ...	68,303.00
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, ...	
Commuted Commissions treated as Assets, . .	
Premium Notes treated as Assets, ...	
Due from Agents, and Premiums due, treated as Assets,	5,514.63
Accrued Rents, Interest, &c., ...	13,046.62
	$344,469.46

LIABILITIES.

Losses and Claims acknowledged, ...	$2,291.83
Losses and Claims resisted, ...	
Losses not acted upon, ...	16,500.00
Dividends payable, ...	17.50
Capital Stock, ...	200,000.00
All other Liabilities, ...	6,022.00
Gross Liabilities, ...	$224,831.33

REMARKS.

Amount of Losses paid in 1867, ...	$193,460.00
Amount at Risk, ...	28,922,376.00
Received for Premiums in 1867, ...	273,930.00

SAMUEL M. CRAFT, *Secretary.* M. F. HODGES, *President.*

Attorney, CYPRIAN WILLCOX, New Haven.

Statement of the Firemen's Fire Insurance Company, N. Y., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$204,000.00
Accumulations and Balances treated as Assets, . .	157,036.40
Whole amount of Assets, ...	$361,036.40

ASSETS.

Amount of Cash on hand and in Banks, ...	$36,952.63
Real Estate owned by the Company, ...	
Loans on Real Estate, ...	108,500.00
Loans on Collaterals, ...	43,650.00
Invested in Bank Stocks, ...	
Invested in State, City, Town and County Securities,	1,300.00
Invested in United States Securities, ...	142,880.00
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, ...	
Commuted Commissions treated as Assets, . .	
Premium Notes treated as Assets, ...	
Due from Agents, and Premiums due, treated as Assets,	2,370.14
Accrued Rents, Interest, &c., treated as Assets, . All other Assets, treated as Assets, . . .	25,383.63
	361,036.40

LIABILITIES.

Losses and Claims acknowledged, ...	
Losses and Claims resisted, ...	
Losses not acted upon, ...	16,000.00
Dividends payable, ...	
Capital Stock, ...	204,000.00
All other Liabilities, ...	
Gross Liabilities, ...	$220,000.00

REMARKS.

Amount of Losses paid in 1867, ...	$81,125.00
Amount at Risk, ...	21,818,966.00
Received for Premiums in 1867, ...	170,100.00

Abner Hayward, *Secretary.* J. V. Harriott, *President.*

Attorney, S. C. Preston, Hartford.

Statement of the Fulton Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000.00
Accumulations and Balances treated as Assets,	94,631.48
Whole amount of Assets,	$294,631.48

ASSETS.

Amount of Cash on hand and in Banks,	5,971.20
Real Estate owned by the Company,	
Loans on Real Estate,	77,550.00
Loans on Collaterals,	40,500.00
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	20,540.00
Invested in United States Securities,	98,712.50
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	9,655.69
Due from Agents, and Premiums due, treated as Assets,	
Accrued Rents, Interest, &c., treated as Assets,	31,702.09
All other Assets, treated as Assets,	
	$294,631.48

LIABILITIES.

Losses and Claims acknowledged,	$15,576.03
Losses and Claims resisted,	
Losses not acted upon,	3,000.00
Dividends payable,	
Capital Stock,	200,000.00
All other Liabilities,	
Gross Liabilities,	$218,576.03

REMARKS.

Amount of Losses paid in 1867,	$131,246.00
Amount at Risk,	29,643,965.00
Received for Premiums in 1867,	210.511.00

Wm. A. Cobb, *President.*

John E. Leffingwell, *Assistant Secretary.*

Attorney, Judah Frisbie, New Haven.

Statement of the Germania Fire Insurance Company, New York, as condensed from their Report to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$500,000.00
Accumulations and Balances treated as Assets, .	376,815.50
Whole amount of Assets, ...	$876,815.50

ASSETS.

Amount of Cash on hand and in Banks, . .	$58,904.91
Real Estate owned by the Company, . . .	47,500.00
Loans on Real Estate, ...	70,585.00
Loans on Collaterals, ...	71,900.00
Invested in Bank Stocks, ...	7,500.00
Invested in State, City, Town and County Securities,	
Invested in United States Securities, . . .	525,000.00
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, . . .	
Commuted Commissions treated as Assets, . .	
Premium Notes treated as Assets, . . .	13,402.38
Due from Agents, and Premiums due treated as Assets,	41,798.94
Accrued Rents, Interest, &c., treated as Assets, .	40,224.27
All other Assets treated as Assets, . . .	
	$876,815.50

LIABILITIES.

Losses and Claims acknowledged, ...	
Losses and Claims resisted, ...	
Losses not acted upon, ...	$57,775.00
Dividends payable, ...	
Capital Stock, ...	500,000.00
All other Liabilities, ...	
Gross Liabilities, ...	$557,775.00

REMARKS.

Amount of Losses paid in 1867, ...	$283,550.00
Amount at Risk, ...	55,642,195.00
Received for Premiums in 1867, ...	593,700,00

HUGO SCHUMANN, *Secretary.* JOHN E. KAHL, *Vice-President.*

Attorney, C. C. KIMBALL, Hartford.

Statement of the Girard Fire and Marine Insurance Company, Philadelphia, Pa., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000.00
Accumulations and Balances treated as Assets,	157,294.42
Whole amount of Assets,	$357,294.42

ASSETS.

Amount of Cash on hand and in Banks,	$18,327.15
Real Estate owned by the Company,	158,000.00
Loans on Real Estate,	72,700.00
Loans on Collaterals,	10,344.50
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	13,160.00
Invested in United States Securities,	51,530.00
Invested in other Stocks, Bonds and Securities,	14,430.00
Deferred Premiums treated as Assets,	
Personal Loans	550.00
Premium Notes, as Assets,	
Due from Agents, and Premiums due, treated as Assets,	12,000.00
Accrued Rents, Interest, &c.,	
All other Assets,	6,252.77
	$357,294.42

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	$3,280.50
Dividends payable,	
Capital Stock,	200,000.00
All other Liabilities,	3,149.71
Gross Liabilities,	$206,430.21

REMARKS.

Losses paid in 1867,	$36,100.00
Amount of Risk,	3,222,262.00
Received for Premiums,	136,900.00

JAS. B. ALVORD, *Secretary*. THOS. CRAVEN, *President*.

Statement of the Glens Falls Fire Insurance Company, Glens Falls, N. Y., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$200,000.00
Accumulations and Balances treated as Assets, .	218,329.18
Whole amount of Assets, ...	$418,329.18

ASSETS.

Amount of Cash on hand and in Banks, . .	$43,349.78
Real Estate owned by the Company, . . .	8,500.00
Loans on Real Estate, ...	44,403.18
Loans on Collaterals, ...	9,000.00
Invested in Bank Stocks, ...	12,375.00
Invested in State, City, Town and County Securities,	3,142.50
Invested in United States Securities, . . .	286,419.34
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, . . .	
Commuted Commissions, ...	
Premium Notes, ...	
Due from Agents, and Premiums due, treated as Assets,	9,239.38
Accrued Rents, Interest, &c., ...	
All other Assets, ...	1,900.00
	$418,329.18

LIABILITIES.

Losses and Claims acknowledged, ...	
Losses and Claims resisted, ...	
Losses not acted upon, ...	$6,094.90
Dividends payable, ...	
Capital Stock, ...	200,000.00
All other Liabilities, ...	
Gross Liabilities, ...	$206,092.90

REMARKS

Amount of Losses paid in 1867, ...	$88,660.00
Amount at risk in 1867, ...	17,073,764.00
Received for Premiums, ...	167,850.00

A. Newton Lock, *Secretary.* R. M. Little, *President.*
Attorney, S. St. John, New Canaan.

Statement of the Hanover Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$400,000.00
Accumulations and Balances treated as Assets, .	206,634.79
Whole amount of Assets, ...	$606,634.79

ASSETS.

Amount of Cash on hand and in Banks, . . .	$26,385.81
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	70,700.00
Loans on Collaterals, ...	21,075.00
Invested in Bank Stocks, ...	
Invested in State, City, Town and County Securities,	19,286.25
Invested in United States Securities, ...	384,700.00
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, . . .	
Commuted Commissions, as Assets, . . .	
Premiums Notes, ...	13,402.38
Due from Agents, and Premiums due, treated as Assets,	35,046.28
Accrued Rents, Interest, &c., ...	36,039.07
All other Assets, Salvage, &c., ...	
	$606,634.79

LIABILITIES.

Losses and claims acknowledged, ...	
Losses and claims resisted, ...	
Losses not acted upon, ...	$50,144.36
Dividends payable, ...	
Capital Stock, ...	400,00.00
All other Liabilities, ...	
Gross Liabilities, ...	$450,144.36

REMARKS.

Amount of Losses paid in 1867, ...	$232,750·00
Amount at Risk in 1867, ...	33,138,664.00
Received for premiums, ...	378,350.00

J. Remsen Lane, *Secretary.*　　B. S. Walcott, *President.*

Attorney, Thos. H. Perkins, Norwich.

Statement of the Holyoke Mutual Fire Insurance Company, Salem, Mass., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	none.
Accumulations and Balances treated as Assets, .	$136,246.66
Whole amount of Assets, ...	$136,246.66

ASSETS.

Amount of Cash on hand and in Banks, . . .	$7,243.12
Real Estate owned by the Company, . . .	55,500.00
Loans on Real Estate, ...	8,830.34
Loans on Collaterals, ...	5,533.89
Invested in Bank Stocks, ...	41,847.50
Invested in State, City, Town and County Securities,	3,325.00
Invested in United States Securities, . . .	6,785.00
Invested in other Stocks, Bonds and Securities, .	4,850.00
Deferred Premiums treated as Assets, . . .	
Commuted Commissions, ...	
Premium Notes, ...	
Due from Agents, and Premiums due, treated as Assets,	975.31
Accrued Rents, Interest, &c., ...	
All other Assets, ...	1,357.00
	$136,246.66

LIABILITIES.

Losses and Claims acknowledged, ...	
Losses and Claims resisted, ...	
Losses not acted upon, ...	$20.00
Dividends payable, ...	240.83
Capital Stock, ...	
All other Liabilities, ...	131,54
Gross Liabilities, ...	$392.37
This Company hold Deposit Notes for . . .	492.37

T. H. Johnson, *Secretary*. Augustus Story, *President*.

Attorney, A. N. Crandall, Norwich.

Statement of the Home Fire Insurance and Marine Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$2,000,000.00
Accumulations and Balances treated as Assets,	1,623,896.78
Whole amount of Assets,	$3,623,896.78

ASSETS.

Amount of Cash on hand and in Banks,	$186,009.09
Real Estate owned by the Company,	
Loans on Real Estate,	832,015.00
Loans on Collaterals,	380,082.56
Invested in Bank Stocks,	126,529.00
Invested in State, City, Town and County Securities,	447,875.00
Invested in United States Securities,	1,391,623.50
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions, treated as Assets,	
Premium Notes, treated as Assets,	9,947.45
Due from Agents, and Premiums due, treated as Assets,	118,518.27
Accrued Rents, Interest, Steamer, &c., All other Assets,	131,296.91
	$3,623,896.78

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	$105,370.55
Dividends payable,	2,120.00
Capital Stock,	2,000,000.00
All other Liabilities,	
Gross Liabilities,	$2,107,490.55

REMARKS.

Amount of Losses paid in 1867,	$1,287,150.00
Amount at Risk in 1867,	172,244,695.00
Received for Premiums,	2,187,570.00

John H. Washburn, *Secretary.* Chas. J. Martin, *President.*

Attorney, Gardner Morse, New Haven.

Statement of the Howard Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$500,000.00
Accumulations and Balances treated as Assets,	183,197.23
Whole amount of Assets,	$683,197.23

ASSETS.

Amount of Cash on hand and in Banks,	$27,202.37
Real Estate owned by the Company,	90,000.00
Loans on Real Estate,	52,300.00
Loans on Collaterals,	23,150.00
Invested in Bank Stocks,	34,500.00
Invested in State, City, Town, and County Securities,	59,075.00
Invested in United States Securities,	382,000.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premiums Due treated as Assets,	2,004.28
Due from Agents, and Premiums due, treated as Assets,	2,658.16
Accrued Rents, Interest, &c.,	10,307.42
All other Assets,	
	$683,197.23

LIABILITIES.

Losses and Claims acknowledged,	$4,494.51
Losses and Claims resisted,	
Losses not acted upon,	3,500.00
Dividends payable,	370.00
Capital Stock,	500,000.00
All other Liabilities,	284.12
Gross Liabilities,	$508,648.63

REMARKS.

Amount of Losses paid in 1867,	$49,280.00
Amount at Risk,	23,046,400.00
Received for Premiums,	175,950.00

Theodore Keeler, *Secretary.* Samuel T. Skidmore, *President.*

Attorney, Caleb Mix, New Haven.

Statement of the Hope Fire Insurance Company, Providence, R. I., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$150,000.00
Accumulations and Balances treated as Assets, .	37,424.51
Whole amount of Assets, ...	$187,424.51

ASSETS.

Amount of Cash on hand and in Banks, . .	$10,091.15
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	
Loans on Collaterals, ...	
Invested in Bank Stock, ...	154,515.00
Invested in State, City, Town and County Securities,	
Invested in United States Securities, . . .	10,825.00
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, . . .	
Commuted Commissions treated as Assets, . .	
Premium Notes treated as Assets, ...	
Due from Agents, and Premiums due, treated as Assets,	7,223.96
Accrued Rents, Interest, &c., treated as Assets, . All other Assets treated as Assets, . . .	4,709.40
	$187,424.51

LIABILITIES.

Losses and Claims acknowledged, ...	6,236.44
Losses and Claims resisted, ...	
Losses not acted upon, ...	5,800.00
Dividends payable, ...	
Capital Stock, ...	150,000.00
All other Liabilites, ...	6,009.75
Gross Liabilities, ...	$168,046.19

REMARKS.

Amount of Losses paid in 1867, ...	$60,300.00
Amount of Risks, ...	7,420,928.00
Received for Premiums, ...	96,100.00

JOSEPH MARTIN, *Secretary.* AMOS M. WARNER, *President.*
Attorney, C. C. KIMBALL, Hartford.

Statement of the Insurance (Fire and Marine) Company of North America, Phil., Penn., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$500,000.00
Accumulations and Balances treated as Assets, .	1,556,412.77
Whole amount of Assets, ...	$2,056,412.77

ASSETS.

Amount of Cash on hand and in Banks, ...	$140,539.90
Real Estate owned by the Company, . . .	30,000.00
Loans on Real Estate, ...	407,050.00
Loans on Collaterals, ...	45,500.00
Invested in Bank Stocks, ...	15,000.00
Invested in State, City, Town, and County Securities,	346,590.00
Invested in United States Securities, . . .	321,166.00
Invested in other Stocks, Bonds and Securities,	29,834.50
Bonds, ...	54,400.00
Personal Securities, ...	59,573.33
Premium Notes, Marine, ...	150,026.53
Due from Agents, and Premiums due, treated as Assets,	149,780.79
Accrued Rents, Interest, &c. treated as Assets,	306,951.72
All other Assets, ...	
	$2,056,412.77

LIABILITIES.

Losses and Claims acknowledged, ...	
Losses and Claims resisted, ...	
Losses not acted upon, ...	111,700,00
Dividends payable, ...	3,500.00
Capital Stock, ...	500,000.00
All other Liabilities, ...	
Gross Liabilities, ...	$615,200.00

REMARKS.

Losses paid in 1867, ...	480,000.00
Amount of Risks, ...	105,650,800.00
Received for Premiums, ...	1,120,600.00

Charles Platt, *Secretary.* Arthur G. Coffin, *President.*
Attorney, C. C. Kimball, Hartford.

Statement of the Lamar Fire Insurance Company, New York, as condensed from their reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$300,000.00
Accumulations and Balances treated as Assets,	209,963.71
Whole amount of Assets,	$509,963.71

ASSETS.

Amount of Cash on hand and in Banks,	$8,570.96
Real Estate owned by the Company,	
Loans on Real Estate,	126,950.00
Loans on Collaterals,	6,000.00
Invested in Bank Stocks,	45,000.00
Invested in State, City, Town and County Securities,	
Invested in United States Securities,	299,449.50
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions,	
Premium Notes,	9,321.25
Due from Agents, and Premiums due, treated as Assets,	3,946.74
Accrued Rents, Interest, &c.,	10,715.26
All other Assets,	
	$509,963.71

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	7,450.00
Dividends payable,	
Capital Stock,	300,000.00
All other Liabilities,	
Gross Liabilities,	$307,450.00

REMARKS.

Amount of Losses paid in 1867,	$84,133.00
Amount at Risk in 1867,	25,535,366.00
Received for Premiums,	217,380.00

Isaac R St. John, *Secretary.* Edward Anthony, *President.*

Attorney, Judah Frisbie, New Haven.

Statement of the Lenox Fire Insurance Company, New York, as condensed from their Reports to January 1st, 1868, *to the Commissioner of Insurance.*

CAPITAL

Amount of Capital paid in,	$150,000.00
Accumulations and Balances treated as Assets,	71,662.62
Whole amount of Assets,	$221,662.62

ASSETS.

Amount of Cash on hand and in Banks,	$5,396.62
Real Estate owned by the Company,	
Loans on Real Estate,	61,450.00
Loans on Collaterals,	28,750.00
Invested in Bank Stocks,	
Invested in State, City, Town, and County Securities,	
Invested in United States Securities,	108,000.00
Invested in other Stocks, Bonds, and Securities,	
Deferred Premiums treated as Assets,	
Lease and Furniture,	8,198.00
Premiums due,	3,077.70
Due from Agents, and Premiums due, treated as Assets,	982.11
Accrued Rents, Interest, &c., treated as Assets,	2,892.52
All other Assets, taxes to be refunded,	2,915.67
	$221,662.62

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	$2,357.00
Dividends payable,	
Capital Stock,	150,000.00
All other Liabilities,	1,076.16
Gross Liabilities,	$153,433.16

REMARKS.

Amount of Losses paid in 1867,	$41,900.00
Amount at Risk,	9,343,986.00
Received for Premiums in 1867,	94,500.00

ARTHUR H. WALTON, *Secretary.* GEO. A. JARVIS, *President.*

Attorney, JUDAH FRISBIE, New Haven.

Statement of the Lorillard Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$1,000,000.00
Accumulations and Balances treated as Assets,	496,235.30
Whole amount of Assets,	$1,496,235.30

ASSETS.

Amount of Cash on hand and in Banks,	$68,685.77
Real Estate owned by the Company,	70,950.40
Loans on Real Estate,	336,200.00
Loans on Collaterals,	107,500.00
Invested in Bank Stocks,	
Invested in State, City, Town, and County Securities,	68,000.00
Invested in United States Securities,	712,125.00
Invested in other Stocks, Bonds, and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Due,	24,834.94
Due from Agents, and Premiums due, treated as Assets,	65,532.00
Accrued Rents, Interest, &c., treated as Assets,	42,407.19
All other Assets, treated as Assets,	
	$1,496,235.30

LIABILITIES.

Losses and Claims acknowledged,	$17,869.44
Losses and Claims resisted,	
Losses not acted upon,	
Dividends payable,	
Capital Stock,	1,000,000.00
All other Liabilities,	
Gross Liabilities,	$1,017,869.44

REMARKS.

Amount of Losses paid in 1867,	$361,000
Amount at Risk in 1867,	89,386,110
Amount of Losses paid in 1866,	739,400

JOHN C. MILLS, *Secretary.* CARLISLE NORWOOD, *President.*
Attorney, ROBERT A. JOHNSON, Hartford.

Statement of the Manhattan Fire and Marine Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$500,000.00
Accumulations and Balances treated as Assets,	503,098.54
Whole amount of Assets,	$1,003,098.54

ASSETS.

Amount of Cash on hand and in Banks,	$41,655.28
Real Estate owned by the Company,	
Loans on Real Estate,	163,550.00
Loans on Collaterals,	15,027.08
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	425.10
Invested in United States Securities,	536,425.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions, as Assets,	
Premium Notes, Marine,	70,929.60
Due from Agents, and Premiums due, treated as Assets,	63,249.52
Accrued Rents, Interest, &c., treated as Assets,	
All other Assets, Salvage Accounts,	69,752.06
	$1,003,098.54

LIABILITIES.

Losses and Claims acknowledged,	$19,377.01
Losses and Claims resisted,	
Losses not acted upon,	24,950.00
Dividends payable,	1,292.50
Capital Stock,	500,000.00
All other Liabilities,	
Gross Liabilities,	$545,619.51

REMARKS.

Amount of Losses paid in 1867,	$734,100.00
Amount at Risk,	66,316,080.00
Received for Premiums in 1867,	1,032,025.00

Geo. B. Hodgsdon *Secretary.*

Andrew J. Smith, *Vice President.*

Attorney, Wm. Connor, Hartford.

Statement of the Market Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000.00
Accumulations and Balances treated as Assets,	309,684.89
Whole amount of Assets,	$509,684.89

ASSETS.

Amount of Cash on hand and in Banks,	$18,855.58
Real Estate owned by the Company,	
Loans on Real Estate,	145,032.00
Loans on Collaterals,	82,175.00
Invested in Bank Stocks,	5,250.00
Invested in State, City, Town, and County Securities,	1,080.00
Invested in United States Securities,	235,047.00
Invested in other Stocks, Bonds, and Securities,	
Premiums treated as Assets,	10,490.06
Commuted Commissions treated as Assets,	
Premium Notes treated as assets,	
Due from Agents, and Premiums due, treated as Assets,	4,112.26
Accrued Rents, Interest, &c., treated as Assets,	
All other Assets, treated as Assets,	7,642.00
	$509,684.89

LIABILITIES.

Losses and Claims acknowledged,	$7,500.00
Losses and Claims resisted,	
Losses not acted upon,	12,940.00
Dividends payable,	
Capital Stock,	200,000.00
All other Liabilities,	10,084.74
Gross Liabilities,	$230,524.74

REMARKS.

Amount of Losses paid in 1867,	$127,100.00
Amount at Risk,	42,242,550.00
Received for Premiums in 1867,	307,300.00

H. P. Freeman, *Secretary.* Asher Taylor, *President.*

Attorney, Ira Sherman, Bridgeport.

Statement of the Metropolitan Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$300,000.00
Accumulations and Balances treated as Assets,	248,440.76
Whole amount of Assets,	$548,440.76

ASSETS.

Amount of Cash on hand and in Banks,	$22,510.46
Real Estate owned by the Company,	2,000.00
Loans on Real Estate,	217,429.00
Loans on Collaterals,	47,797,05
Invested in Bank Stocks,	
Invested in State, City, Town, and County Securities,	
Invested in United States Securities,	108,829.50
Invested in other Stocks, Bonds, and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	4,497.92
Due from Agents, and Premiums due, treated as Assets,	5,844 81
Accrued Rents, Interest, &c., treated as Assets,	
All other Assets, treated as Assets,	79,429,02
	$548,440.76

LIABILITIES.

Losses and Claims acknowledged,	$46,676.27
Losses and Claims resisted,	
Losses not acted upon,	33,530.27
Dividends payable,	
Capital Stock,	300,000.00
All other Liabilities,	101,151.56
Gross Liabilities,	$481,358.10

REMARKS,

Amount of Losses paid in 1867,	$710,900.00
Amount at Risk,	37,151,280.00
Received for Premiums in 1867,	225,249.00

W. R. Wadsworth, *Secretary.* R. M. C. Graham *President.*

Attorney, Ralph Gillett, Hartford.

Statement of the Merchants Fire Insurance Company, Providence, R. I., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000.00
Accumulations and Balances treated as Assets,	137,631.00
Whole amount of Assets,	$337,631.00

ASSETS.

Amount of Cash on hand and in Banks,	$19,168.40
Real Estate owned by the Company,	
Loans on Real Estate,	
Loans on Collaterals,	
Invested in Bank Stocks,	200,000.00
Invested in State, City, Town and County Securities,	
Invested in United States Securities,	70,000.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premiums Notes, treated as Assets,	35,176.94
Due from Agents, and Premiums due, treated as Assets,	6,535,66
Accrued Rents, Interest, &c., treated as Assets,	
All other Assets, treated as Assets,	6,750.00
	$337,631.00

LIABILITIES.

Losses and claims acknowledged,	$3,523.00
Losses and claims resisted,	
Losses not acted upon,	23,666.00
Dividends payable,	
Capital Stock,	200,00.00
All other Liabilities,	
Gross Liabilities,	$227,189.00

REMARKS.

Amount of Losses paid in 1867,	$800.00
Amount at Risk,	10,850,265.00
Received for Premiums in 1867,	170,310.00

Chales Foster, *Secretary.* Walter Paine, *President.*

Attorney, Wm. Connor, Hartford.

Statement of the Merchants and Farmers Mutual Fire and Marine Insurance Company, Worcester, Mass., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	none.
Accumulations and Balances treated as Assets,	$200,524.39
Whole amount of Assets,	$200,524.39

ASSETS.

Amount of Cash on hand and in Banks,	$3,634.44
Real Estate owned by the Company,	
Loans on Real Estate,	3,195.50
Loans on Collaterals,	7,430.40
Invested in Bank Stocks,	37,790.00
Invested in State, City, Town and County Securities,	31,000.00
Invested in United States Securities,	113,715.00
Invested in Personal Securities,	600.00
Deferred Premiums treated as Assets,	
Commuted Commissions,	
Notes held liable to Assessments,	400,000.00
Due from Agents, and Premiums due, treated as Assets,	1,500.00
Accrued Rents, Interest, &c.,	
All other Assets,	1,659.05
	$200,524.39

LIABILITIES.

Losses and Claims acknowledged,	$584.00
Losses and Claims resisted,	
Losses not acted upon,	2,000.00
Dividends payable,	
Capital Stock,	
All other Liabilities,	
Gross Liabilities,	$2,584.00

E. B. Stoddard, *Secretary.* Isaac Davis, *President.*
Attorney, Ralph Gillett, Hartford.

Statement of the Narragansett Fire and Marine Insurance Company, Providence, R. I., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL

Amount of Capital paid in,	$496,859.00
Accumulations and Balances treated as Assets,	243,495.11
Whole amount of Assets,	$740,354.11

ASSETS.

Amount of Cash on hand and in Banks,	$22,630.38
Real Estate owned by the Company,	
Loans on Real Estate,	8,000.00
Loans on Collaterals,	859.00
Invested in Bank Stocks,	172,300.00
Invested in State, City, Town, and County Securities,	
Invested in United States Securities,	183,857.06
Loans on Personal Security,	198,568.72
Deferred Premiums treated as Assets,	
Commuted Commissions,	
Premium Notes,	94,450.84
Due from Agents, and Premiums due, treated as Assets,	48,461.20
Accrued Rents, Interest, &c., treated as Assets,	
All other Assets,	11,226.91
	$740,354.11

LIABILITIES.

Losses and Claims acknowledged,	estimated,	$69,103.18
Losses and Claims resisted,		
Losses not acted upon,		
Dividends payable,		
Capital Stock,		
All other Liabilities,		9,655.26
Gross Liabilities,		$78,758.44

REMARKS.

Amount of Losses paid in 1867,	$314,970.00
Amount at Risk,	21,319,990.00
Received for Premiums in 1867,	431,130.00

E. Turner, *Secretary.* A. O. Peck, *President.*

Attorney, Wm. Connor, Hartford.

Statement of the Niagara Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$1,000,000.00
Accumulations and Balances treated as Assets,	371,315.83
Whole amount of Assets,	$1,371,315.83

ASSETS.

Amount of Cash on hand and in Banks,	$49,700.74
Real Estate owned by the Company,	60,000.00
Loans on Real Estate,	184,500.00
Loans on Collaterals,	337,400.00
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	28,000.00
Invested in United States Securities,	573,305.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions, treated as Assets	
Premium Notes, treated as Assets,	
Due from Agents, and Premiums due, treated as Assets,	75,196.84
Accrued Rents, Interest, &c.,	
All other Assets,	63,213.25
	$1,371,315.83

LIABILITIES.

Losses and Claims acknowledged,	$12,000.00
Losses and Claims resisted,	
Losses not acted upon,	58,126.50
Dividends payable,	680.00
Capital Stock,	1,000,000.00
All other Liabilities,	
Gross Liabilities,	$1,070,806.50

REMARKS.

Amount of Losses paid in 1867,	$382,480.00
Amount at Risk,	70,473,230.00
Received for Premiums in 1867,	689,700.00

HENRY KIPP, *Secretary.* J. D. STEELE, *President.*

Attorney, CHARLES ROBINSON, New Haven.

Statement of the North American Fire Insurance Company, New York, as condensed from their Reports to January 1*st*, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$500,000.00
Accumulations and Balances treated as Assets,	202,162.32
Whole amount of Assets,	$702,162.32

ASSETS.

Amount of Cash on hand and in Banks,	$21,764.20
Real Estate owned by the Company,	
Loans on Real Estate,	163,710.00
Loans on Collaterals,	19,000.00
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	63,160.00
Invested in United States Securities,	363,635.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions,	
Premium Notes,	
Due from Agents, and Premiums due, treated as Assets,	38,692.60
Accrued Rents, Interest, &c.,	
All other Assets,	72,200.52
	$702,162.32

LIABILITIES.

Losses and Claims acknowledged,	$10,356.71
Losses and Claims resisted,	
Losses not acted upon,	28,111.95
Dividends payable,	985.50
Capital Stock,	500,000.00
All other Liabilities,	
Gross Liabilities,	$539,450.36

REMARKS

Amount of Losses paid in 1867,	$311,000.00
Amount at risk,	47,608,340.00
Received for Premiums in 1867,	484,430.00

F. H. Carter, *Secretary.* J. W. Otis, *President.*

Attorney, Charles Robinson, New Haven.

Statement of the National (Fire and Marine) Insurance Company, Boston, Mass., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$300,000.00
Accumulations and Balances treated as Assets, .	511,508.39
Whole amount of Assets, ...	$811,508.39

ASSETS.

Amount of Cash on hand and in Banks, . .	$24,173.46
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	53,500.00
Loans on Collaterals, ...	16,800.00
Invested in Bank Stocks, ...	357,090.00
Invested in State, City, Town, and County Securities,	24,350.00
Invested in United States Securities, . . .	75,620.00
Invested in other Stocks, Bonds and Securities,	59,830.00
Loans on Personal Securities, ...	83,800.97
Commuted Commissions treated as Assets, .	
Premium Notes, ...	80,704.87
Due from Agents, and Premiums due, treated as Assets,	19,587.85
Accrued Rents, Interest, &c. treated as Assets,	
All other Assets, ...	13,051.24
	$811,508.39

LIABILITIES.

Losses and Claims acknowledged, ...	
Losses and Claims resisted, ...	
Losses not acted upon, ...	$67,99.450
Dividends payable, ...	661.50
Capital Stock, ...	300,000.00
All other Liabilities, ...	66.78
Gross Liabilities, ...	$368,722.78

REMARKS.

Losses paid in 1867, ...	$239,450.00
Amount of Risks, ...	31,027,775.00
Received for Premiums in 1867, ...	418,225.00

Geo. W. Kuhn, *Secretary.* A. H. Bean, *President.*

Attorney, C. B. Bowers, New Haven.

Statement of the Phœnix Fire Insurance Company, Brooklyn, New York, as condensed from their Report to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$1,000,000.00
Accumulations and Balances treated as Assets,	558,567.73
Whole amount of Assets,	$1,558,567.73

ASSETS.

Amount of Cash on hand and in Banks,	$90,000.00
Real Estate owned by the Company,	140,000.00
Loans on Real Estate,	276,151.29
Loans on Collaterals,	94,850.00
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities, Invested in United States Securities,	557,792.50
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes, Marine Department,	197,432.76
Due from Agents, and Premiums due treated as Assets,	175,390.84
Accrued Rents, Interest, &c., treated as Assets,	14,390.55
All other Assets treated as Assets,	12,559.79
	$1,558,567.73

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	$84,957.85
Dividends payable,	
Capital Stock,	1,000,000.00
All other Liabilities,	13,000.00
Gross Liabilities,	$1,097,957.85

REMARKS.

Amount of Losses paid in 1867,	$1,152,300.00
Amount at Risk,	85,716,474.00
Received for Premiums in 1867,	1,590,420.00

PHILANDER SHAW, *Secretary.* STEPHEN CROWELL, *President.*

Attorney, C. C. KIMBALL, Hartford.

Statement of the People's Fire Insurance Company, Worcester, Mass., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000.00
Accumulations and Balances treated as Assets,	287,766.04
Whole amount of Assets,	$487,766.04

ASSETS.

Amount of Cash on hand and in Banks,	8,952 85
Real Estate owned by the Company,	50,000.00
Loans on Real Estate,	115,582.00
Loans on Collaterals,	17,350.00
Invested in Bank Stocks,	46,771,00
Invested in State, City, Town and County Securities,	91,471.00
Invested in United States Securities,	133,217.00
Invested in other Stocks, Bonds and Securities,	16,650.00
Deferred Premiums treated as Assets,	
Personal Securities,	3,900.00
Premium Notes treated as Assets,	
Due from Agents, and Premiums due, treated as Assets,	
Accrued Rents, Interest, &c., treated as Assets,	2,193.15
All other Assets, treated as Assets,	1,679.04
	$487,766.04

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	
Dividends payable,	$1,299.22
Capital Stock,	200,000.00
All other Liabilities,	
Gross Liabilities,	$201,299.22

REMARKS.

Amount of Losses paid in 1867,	
Amount at Risk,	
Received for Premiums in 1867,	

HENRY CHAPIN, *President.*

AUGUSTUS N. CURRIER, *Secretary.*

Attorney, A. N. CRANDALL, Norwich.

Statement of the Providence Washington (Fire) Insurance Company, Providence, R. I., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000.00
Accumulations and Balances treated as Assets,	170,652.98
Whole amount of Assets,	$270,652.98

ASSETS.

Amount of Cash on hand and in Banks,	$20,502.71
Real Estate owned by the Company,	158,000.00
Loans on Real Estate,	
Loans on Collaterals,	
Invested in Bank Stock,	33,600.00
Invested in State, City, Town and County Securities,	100,000.00
Invested in United States Securities,	42,000.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	
Due from Agents, and Premiums due, treated as Assets,	9,879.35
Accrued Rents, Interest, &c., treated as Assets,	
All other Assets treated as Assets,	6,670.92
	$370,652.98

LIABILITIES.

Losses and Claims acknowledged,	$8,222.13
Losses and Claims resisted,	
Losses not acted upon,	10,959.91
Dividends payable,	6,286.00
Capital Stock,	200,000.00
All other Liabilites,	2,598.77
Gross Liabilities,	$228,066.81

REMARKS.

Amount of Losses paid in 1867,	$100,670.00
Amount of Risks,	14,766,502.00
Received for Premiums in 1867,	180,384.00

John Kingsbury, *Secretary.* Warren S. Green, *President.*

Attorney, Wm. E. Baker, Hartford.

Statement of the Republic Fire Insurance Company, New York, as condensed from their reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$300,000.00
Accumulations and Balances treated as Assets, .	350,880.43
Whole amount of Assets, ...	$650,880.43

ASSETS.

Amount of Cash on hand and in Banks, . .	$21,482.64
Real Estate owned by the Company, . . .	80,000.00
Loans on Real Estate, ...	118,150.00
Loans on Collaterals, ...	6,000.00
Invested in Bank Stocks, ...	35,630.00
Invested in State, City, Town and County Securities,	
Invested in United States Securities, . . .	317,050.00
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, . . .	
Commuted Commissions, ...	
Premium Notes, ...	
Due from Agents, and Premiums due, treated as Assets,	35,195.90
Accrued Rents, Interest, &c., ...	
All other Assets, ...	37,371.89
	$650,880.43

LIABILITIES.

Losses and Claims acknowledged, . . .	
Losses and Claims resisted, ...	
Losses not acted upon, ...	$50,124.50
Dividends payable, ...	
Capital Stock, ...	300,000.00
All other Liabilities, ...	
Gross Liabilities, ...	$350,124.50

REMARKS.

Amount of Losses paid in 1867, ...	$253,650.00
Amount at Risk, ...	26,026,545.00
Received for Premiums in 1867, ...	364,780.00

DUNCAN F. CURRIE, *Secretary.*   ROB. S. HONE, *President.*

Attorney, E. FULLER, Norwich.

Statement of the Roger Williams Insurance Company, Providence, R. I., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$100,000.00
Accumulations and Balances treated as Assets, .	101,358.81
Whole amount of Assets, ...	$201,358.81

ASSETS.

Amount of Cash on hand and in Banks, . . .	$18,518.32
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	
Loans on Collaterals, ...	
Invested in Bank Stocks, ...	140,410.00
Invested in State, City, Town and County Securities,	
Invested in United States Securities, . . .	
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets, . . .	
Commuted Commissions, treated as Assets,	
Premium Notes, treated as Assets, ...	27,888.38
Due from Agents, and Premiums due, treated as Assets,	11,255.11
Accrued Rents, Interest, Steamer, &c., . .	
All other Assets, ...	3,250.00
	$201,358.81

LIABILITIES.

Losses and Claims acknowledged, ...	$3,091.58
Losses and Claims resisted, ...	
Losses not acted upon, ...	9,700.00
Dividends payable, ...	340.00
Capital Stock, ...	100,000.00
All other Liabilities, ...	76.76
Gross Liabilities, ...	$113,208.34

REMARKS.

Amount of Losses paid in 1867, ...	$64,535.00
Amount at Risk, ...	6,734,630.00
Received for Premiums in 1867, ...	115,250.00

J. W. DAVENPORT, *Secretary.* A. A. WILLIAMS, *President.*

Attorney, A. N. CRANDALL, Norwich.

Statement of the Security Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$1,000,000.00
Accumulations and Balances treated as Assets,	477,677.12
Whole amount of Assets,	$1,477,677.12

ASSETS.

Amount of Cash on hand and in Banks,	$96,412.95
Real Estate owned by the Company,	
Loans on Real Estate,	458,684.00
Loans on Collaterals,	145,500.00
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	94,132.50
Invested in United States Securities,	285,542.50
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	69,609.15
Due from Agents, and Premiums due, treated as Assets,	133,647.84
Accrued Rents, Interest, &c.,	194,148.18
All other Assets,	
	$1,477,677.12

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	$92,631.34
Dividends payable,	
Capital Stock,	1,000,000.00
All other Liabilities,	7,995.37
Gross Liabilities,	$1,100,626.71

REMARKS.

Losses paid in 1867,	$1,073,150,00
Amount of Risk,	113,702,312.00
Received for Premiums in 1867,	1,093,420.00

Frank W. Ballard, *Secretary.* A. S. Hastings, *President.*

Attorney, Wm. Wallace, Hartford.

Statement of the Springfield Fire and Marine Company, of Springfield, Mass., as condensed from their Reports to January 1, 1868, *made to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$500,000.00
Amount of Surplus, ...	281,067.90
Whole amount of actual Capital and Surplus,	$781,067.90

ASSETS.

Amount of Cash on hand, ...	$16,248.38
Amount due from Agents, ...	40,750.00
Real Estate owned by the Company, . . .	60,000.00
Loans on Real Estate, ...	76,821.66
Loans on Collaterals, ...	41,181,74
On personal securities, ...	125.00
Invested in Bank Stocks, ...	152,490.00
Invested in Railroad Stock, ...	143,588.25
Invested in Railroad Bonds, ...	4,500.00
Invested in State, City, Town, and County Securities,	5,000.00
Invested in United States Securities, ...	228,050.00
Amount of Premium Notes, ...	
All other Assets, ...	12,312.87
	$781,067.90

LIABILITIES.

Losses and Claims acknowledged, ...	$32,006.32
Losses and Claims resisted, ...	
Losses not acted upon, ...	
Dividends payable, ...	
Capital Stock, ...	500,000.00
All other Liabilities, ...	
Gross Liabilities, ...	$532,006.32

REMARKS.

Amount of Losses paid in 1867, ...	$284,500.00
Amount at Risk, ...	44,650,700.00
Received for Premiums in 1867, ...	475,000.00

J. N. Dunham, *Secretary.* E. Freeman, *President.*

Attorney, H. L. Cannon, New Haven,

Statement of the Standard Fire Insurance Company, N. Y., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000.00
Accumulations and Balances treated as Assets,	125,799.62
Whole amount of Assets,	$325,799.62

ASSETS.

Amount of Cash on hand and in Banks,	$12,490.30
Real Estate owned by the Company,	
Loans on Real Estate,	62,200.00
Loans on Collaterals,	30,650.00
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	4,750.00
Invested in United States Securities,	206,687.50
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	5,163.96
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	
Due from Agents, and Premiums due, treated as Assets,	1,147.40
Accrued Rents, Interest, &c., treated as Assets,	545,32
All other Assets, treated as Assets,	2,165.14
	$325,799.62

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	1,255.00
Dividends payable,	
Capital Stock,	200,000.00
All other Liabilities,	
Gross Liabilities,	$201,255.00

REMARKS.

Amount of Losses paid in 1867,	$55,260.00
Amount at Risk,	21,054,390.00
Received for Premiums in 1867,	152,600.00

WM. M. ST. JOHN, *Secretary.* WM. CRIPPS, *President.*

Attorney, CHARLES ROBINSON, New Haven.

Statement of the Tradesman's Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$150,000.00
Accumulations and Balances treated as Assets,	152,819.49
Whole amount of Assets,	$302,819.49

ASSETS.

Amount of Cash on hand and in Banks,	$18,613.97
Real Estate owned by the Company,	
Loans on Real Estate,	83,950.00
Loans on Collaterals,	
Invested in Bank Stock,	4,375.00
Invested in State, City, Town and County Securities,	5,300.00
Invested in United States Securities,	171,962.50
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	
Due from Agents, and Premiums due, treated as Assets,	4,372.73
Accrued Rents, Interest, &c., treated as Assets,	314,225.29
All other Assets treated as Assets,	
	$302,819.49

LIABILITIES.

Losses and Claims acknowledged,	$3,705.00
Losses and Claims resisted,	
Losses not acted upon,	26,473.22
Dividends payable,	472.00
Capital Stock,	150,000.00
All other Liabilites,	
Gross Liabilities,	$180,650.22

REMARKS.

Amount of Losses paid in 1867,	$111,500.00
Amount of Risks,	28,050,000.00
Received for Premiums in 1867,	224,500.00

TIMOTHY J. BROWN, *Secretary.* DAVID S. KEELER, *President.*

Attorney, GEORGE S. LESTER, New Haven.

Statement of the Union Fire Insurance Company, Baltimore, Maryland, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$100,000.00
Accumulations and Balances treated as Assets,	68,501.23
Whole amount of Assets,	$168,501.23

ASSETS.

Amount of Cash on hand and in Banks,	$1,844.38
Real Estate owned by the Company,	40,000.00
Loans on Real Estate,	
Loans on Collaterals,	31,400.00
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	77,300.00
Invested in United States Securities,	43,000.00
Invested in other Stocks, Bonds, and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions,	
Premium Notes trtated as Assets,	
Due from Agents, and Premiums due, treated as Assets,	3,956.85
Accrued Rents, Interest, &c.,	
All other Assets,	1,000.00
	$168,501.23

LIABILITIES.

Losses and Claims acknowledged,	$2,375.58
Losses and Claims resisted,	
Losses not acted upon,	7,926.75
Dividends payable,	500.00
Capital Stock,	100,000.00
All other Liabilities,	150.00
Gross Liabilities,	$110,952.33

This Company reports, Stock Notes secured, $100,000.00

OTIS SPEAR, *Secretary.* JOHN COATES, *President.*

Attorney, L. W. SPERRY, New Haven.

Statement of the United States Fire and Marine Insurance Company, Baltimore, Md., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$250,000.00
Accumulations and Balances treated as Assets,	181,276.29
Whole amount of Assets,	$431,276.29

ASSETS.

Amount of Cash on hand and in Banks,	$16,759.72
Real Estate owned by the Company,	21,000.00
Loans on Real Estate,	
Loans on Collaterals,	2,560.00
Invested in Bank Stocks,	26,820.00
Invested in State, City, Town, and County Securities,	82,300.00
Invested in United States Securities,	130,000.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions treated as Assets,	
Premium Notes, Marine,	82,157.14
Due from Agents, and Premiums due, treated as Assets,	62,185.43
Accrued Rents, Interest, &c., treated as Assets,	7,494.00
All other Assets, treated as Assets,	
	$431,276.29

LIABILITIES.

Losses and Claims acknowledged,	$8,587.50
Losses and Claims resisted,	
Losses not acted upon,	38,652.92
Dividends payable,	
Capital Stock,	250,000.00
All other Liabilities,	
Gross Liabilities,	$297,240.42

REMARKS.

Amount of Losses paid in 1867,	$156,970.00
Amount at Risk,	11,098,813.00
Received for Premiums in 1867,	187,960.00

John W. Randolph, *President.*

Henry C. Jones, *Secretary.*

Attorney, L. W. Sperry, New Haven.

Statement of the Westchester County Mutual Fire Insurance Company, New York, as condensed from their Reports to January 1*st*, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$31,750.23
Accumulations and Balances treated as Assets,	198.492.76
Whole amount of Assets,	$230,242.99

ASSETS.

Amount of Cash on hand and in Banks,	$13,365.78
Real Estate owned by the Company,	5,000.00
Loans on Real Estate,	115,750.00
Loans on Collaterals,	
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	21,550.00
Invested in United States Securities.	27,112.60
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	
Commuted Commissions, treated as Assets,	
Premium Notes treated as Assets,	31,750.23
Due from Agents, and Premiums due, treated as Assets,	8,790.22
Accrued Rents, Interest, &c.,	
All other Assets,	6,925.26
	$230,242.99

LIABILITIES.

Losses and Claims acknowledged,	
Losses and Claims resisted,	
Losses not acted upon,	
Dividends payable,	
Capital Stock,	
All other Liabilities,	$31,750.23
Gross Liabilities,	$31,750.23

REMARKS

Amount of Losses paid in 1867,	$17,907.58
Amount at Risk,	13,603.78
Received for Premiums in 1867,	81,114.04

Geo. R. Crawford, *Secretary.* Geo. J. Penfield, *President.*

Attorney, Marcus DeForest, Bridgeport.

Statement of the Western Fire Insurance Company, Buffalo, New York, as condensed from their Report to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$300,000.00
Accumulations and Balances treated as Assets, .	294,280.51
Whole amount of Assets, ...	$594,230.51

ASSETS.

Amount of Cash on hand and in Banks, . .	$104,064.79
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	84,300.00
Loans on Collaterals, ...	52,500.00
Invested in Bank Stocks, ...	
Invested in State, City, Town and County Securities,	65,000.00
Invested in United States Securities, . . .	175,000.00
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, . . .	
Commuted Commissions treated as Assets, . .	
Premium Notes, ...	15,420.83
Due from Agents, and Premiums due treated as Assets,	64,793.53
Advance on Securities, ...	13,650.00
All other Assets treated as Assets, . . .	19,601.36
	$594,230.51

LIABILITIES.

Losses and Claims acknowledged, ...	$1,775.00
Losses and Claims resisted, ...	
Losses not acted upon, ...	19,941.66
Dividends payable, ...	
Capital Stock, ...	300,000.00
All other Liabilities, ...	20,247.30
Gross Liabilities, ...	$341,963.97

REMARKS.

Amount of Losses paid in 1867, ...	$345,382.00
Amount at Risk, ...	36,265,548.00
Received for Premiums in 1867, ...	557,190.00

Edward Smith, *Secretary.* P. S. Marsh, *Vice-President.*

Attorney, H. L. Cannon, New Haven.

Statement of the Yonkers Fire Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$500,000.00
Accumulations and Balances treated as Assets, .	234,386.17
Whole amount of Assets, ...	$734,386.17

ASSETS.

Amount of Cash on hand and in Banks, . . .	$42,968.22
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	153,300.00
Loans on Collaterals, ...	30,800.00
Invested in Bank Stocks, ...	
Invested in State, City, Town and County Securities,	33,170.00
Invested in United States Securities, . . .	426,000.00
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, . .	
Commuted Commissions, as Assets, . . .	
Premium Notes, ...	
Due from Agents, and Premiums due, treated as Assets,	24,329.83
Accrued Rents, Interest, &c., treated as Assets, All other Assets, ...	23,819.12
	$734,386.17

LIABILITIES.

Losses and Claims acknowledged, ...	
Losses and Claims resisted, ...	
Losses not acted upon, ...	$25,532.86
Dividends payable, ...	
Capital Stock, ...	500,000.00
All other Liabilities, ...	
Gross Liabilities, ...	$525,532.86

REMARKS.

Amount of Losses paid in 1867, ...	$194,580.00
Amount at Risk, ...	41,518,686.00
Received for Premiums in 1867, ...	403,990.00

Richard L. Franklin, *President.*

John W. Murray, *Secretary.*

Attorney, H. L. Cannon, New Haven.

MARINE DISASTERS,

MOSTLY CONNECTED WITH THE

COMMERCE OF THE CITY OF NEW YORK,

From the years 1857 to 1867.

SCREW PROPELLERS.

NAMES.	Tonnage.	How Lost or Destroyed.
Isle of Madeira,	480	Lost at sea.
Monumental City,	614	Lost off Australia.
Union,	541	Lost at sea.
Albatros,	550	Lost at sea.
Pennsylvania,	410	Burned, July 20, 1860.
City of Glasgow,	1,320	Lost at sea.
City of Savannah,	450	Lost at sea.
S. S. Lewis,	1,120	Lost at sea.
Fairfax,	440	Burned, Washington, 1866.
Pioneer,	1,000	Lost at sea.
West Wind,	560	Burned.
City of Pittsburg,	1,250	Burned.
Glasgow,	1,725	Burned at sea, July, 1865.
Palmetto,	765	Lost off Block Island, 1856.
New York,	574	Lost—Hatteras Inlet, 1862.
City of Norfolk,	550	Confiscated as slaver by Span. Gov.
Petrel,	750	Lost at sea.
George's Creek,	460	Foundered, Aug. 20, 1863.
Veguero,	360	Destroyed at New Orleans.
Thos. Swann,	460	Lost at sea.
Locust Point,	460	Foundered, July, 1864.
Arispe,	760	Lost near San Francisco.
Clyde,	1,200	Lost at sea.
J. N. Harris,	220	Sunk by collision.
Thos. Sparks,	440	Wrecked in 1860.
Canadian,	764	Lost at sea.
North Carolina,	680	Lost at sea.
Sarah Sands,	1,500	Burned at sea.
Columbus,	500	Lost near San Salvador, 1861.
Indian,	1,764	Stranded, Nov., 1859.
Anglo Saxon,	1,764	Lost near Cape Race, 1863.
Alma,	1,500	Lost in Red Sea, 1859.
Santa Cruz,	200	Burned, 1862.

Screw Propellers—continued.

New York,	2,150	Lost at sea, Jan., 1858.
Le Lyonnais,	1,620	Lost at sea, Sept., 1857.
Tempest,	1,500	Left N. Y. Feb. 26, '57, never heard from.
Commerce,	486	Foundered at sea, 1860.
Argo,	2,315	Wrecked June, 1859.
Austria,	2,406	Burned at sea, Sept., 1858.
Robert Waterman,	236	Stranded, Nov., 1859.
Victoria,	400	Stranded.
Jura,	2,334	Wrecked, Nov., 1864.
Enoch Train,	387	Destroyed, 1862.
Quinnebaug,	196	Lost off Carolina, 1865.
Uncle Ben,	155	Pirate Retribution.
Osceola,	177	Foundered at sea, Nov., 1861.
Lulu,	400	Lost off Jamaica, 1861.
Primero,	284	Lost at sea, Feb., 1862.
Wyandott,	400	Wrecked, Jan., 1866.
Potomaska,	300	Lost off South America, 1866.
Baltimore,	450	Lost, Dec., 1866.
Oriental,	1,562	Lost off Hatteras, 1862.
City of New York,	2,500	Lost at sea, 1864.
Thorn,	210	Destroyed, Cape Fear, 1865.
Gen. Burnside,	387	Wrecked, 1865.
Mary A. Boardman,	552	Wrecked, Romer Shoals, 1866.
Quincy,	396	Wrecked, Dec., 1863.
Melville,	346	Lost at sea, Jan., 1865.
Alleghany,	1,340	Stranded, Rockaway, 1865.
Kingfisher,	500	Lost at sea, 1866.
Tonawanda,	782	Lost off Florida, 1866.
Exact,	286	Lost, Pacific Ocean, 1866.
Constitution,	947	Lost at sea, Dec., 1865.
E. L. Clark,	702	Burned, New York, 1866.
Olympus,	423	Foundered at sea, 1865.
Starlight,	444	Wrecked, Barnegat, 1866.
H. D. Mount,	330	From N. Y., 1865, never heard from.
Gen. Lyons,	952	Burned at sea, March, 1865.
Idaho,	522	Wrecked, Dec., 1865.
Electric Spark,	810	Destroyed, July, 1864.
Aphrodite,	1,098	Wrecked, Sept., 1864.
North America,	1,636	Founderd at sea, 1865.
Rapidan,	996	Lost, South America, 1866.
Chas. Benton,	432	Foundered at sea, Jan., 1866.
Twilight,	644	Stranded, Dec., 1865.
Scotland,	3,803	Wrecked, Sandy Hook, 1866.
Norwich,	329	Burned at sea, 1865.
Sheridan,	592	Wrecked, Body Island, 1866.
Ephesus,	1,438	Lost at sea, July, 1866.

Total tonnage, 64,180. Propellers, 78.

MARINE DISASTERS,

MOSTLY CONNECTED WITH THE

COMMERCE OF THE CITY OF NEW YORK,

From the years 1857 to 1867.

SIDE WHEEL STEAMERS.

NAMES.	Tonnage.	How Lost or Destroyed.
Crescent City,	1,200	Stranded.
Brother Jonathan,	1,330	Lost in Pacific Ocean, 1865.
Louisiana,	1,000	Burned at sea.
North America,	1,300	Lost at sea.
Winfield Scott,	1,160	Lost near San Francisco.
Pacific,	2,880	Lost from Liverpool, 1856.
Cherokee,	1,000	Burned at sea.
Ella Warley,	1,215	Lost, Feb., 1863.
Arctic,	2,850	Lost at sea.
Osprey,	615	Burned, Kingston, Jamaica.
Franklin,	2,500	Lost at sea.
Northerner,	1,050	Foundered, Jan., 1860.
Tennessee,	1,850	Burned.
La Fayette,	800	Burned.
Albatross,	550	Lost at sea.
Pennsylvania,	410	Burned, July 20, 1860.
Humbolt,	2,000	Lost at sea.
Marion,	925	Lost, April, 1863.
City of Glasgow,	1,320	Lost at sea.
Golden Gate,	2,100	Burned off Manzanilla, 1863.
Roanoke,	1,070	Burned by Pirates, Oct., 1864.
Independence,	1,620	Lost at sea.
Atlantic,	670	Destroyed.
Delaware,	620	Lost in St. John's River, Florida, 1865.
Cortez,	1,150	Burned in China Sea, 1862.
Black Warrior,	1,556	Stranded, Feb. 20, 1858.
Manzanares,	620	Burned at sea.
Texas,	1,360	Burned.
Perseverance,	1,020	Lost at sea, 1856.
Jamestown,	1,250	Destroyed by U. S. gun boat.

Side-Wheel Steamers—continued.

Central America,	2,200	Lost at sea, 1858.
Penobscott,	626	Lost at sea, Sept., 1857.
America,	1,800	Lost at sea.
San Francisco,	2,325	Lost at sea.
Jewess,	1,850	Lost at sea.
Tennessee,	1,150	Lost, coast of Georgia, 1865.
Yankee Blade,	2,000	Lost at sea.
Chas. Morgan,	1,215	Destroyed, 1862.
Nashville,	1,200	Destroyed, 1863, by U. S. gunboat.
Knoxville,	1,350	Burned.
Granada,	1,130	Lost near San Francisco, 1860.
Surprise,	363	Lost, China Sea.
Memenon Sanford,	950	Lost on southern coast.
Nautilus,	870	Lost at sea.
Commonwealth,	2,000	Burned, Dec., 1865.
Sicilia,	1,400	Lost at sea.
North Carolina,	862	Burned at sea.
The Cuba,	800	Foundered.
Leviathan,	500	Burned at Sandy Hook, 1856.
Wm. H. Webb,	650	Destroyed, 1865.
Galveston,	1,000	Destroyed, 1862.
Opelousas,	1,000	Collision at sea—sunk.
Virginia,	756	Lost at sea.
Orizaba,	630	Destroyed, 1862.
Mississippi,	1,460	Foundered in China Sea.
Arizona,	900	Destroyed, 1862.
General Rusk,	450	Destroyed, 1862.
Governor,	644	Foundered at sea, 1861.
York Town,	1,400	Destroyed by U. S. ship of war.
Sawanee,	480	Lost off Cape Romaine, 1866.
Daniel Webster,	1,070	Lost at sea, Oct., 1866.
Andrew Johnson,	1,060	Wrecked, Oct. 6, 1866.
Commodore,	970	Wrecked, L. I. Sound, 1866.
Alabama,	650	Destroyed, 1862.
Bio Bio,	960	Burned, New Orleans, 1863.
Pagnette de Maule,	400	Captured off Chili, 1866.
Peerless,	690	Foundered at sea, 1861.
John Hart,	220	Lost, Lake Nicaragua, 1862.
Fire Cracker,	1,046	Wrecked, China sea, 1864,
New England,	395	Burned, St. Johns, 1865.
Che Kiang,	1,265	Burned, China Sea, 1864.
Foh Kein,	2,094	Burned, China Sea, 1865.
Admiral Dupont,	700	Collision—sunk, June, 1865.
Evening Star,	1,917	Foundered at sea, Oct. 3, 1866.
Arabian,	428	Lost at sea, 1863.
St. John,	526	Wrecked, 1864.
Gen. Hooker,	270	Burned, at Savannah, 1866.

Side-Wheel Steamers—continued.

Golden Rule,	3,080	Wrecked, May 30, 1865.
Nelly Pentz,	760	Wrecked, 1865.
Nashua,	420	Wrecked, March, 1866.
Gen. Shepley,	279	Burned, Jan., 1867.
Emma Valeria,	357	Lost, Savannah River, 1865.
Richmond,	698	Lost, Cape Hatteras, Jan., 1866.
Vera Cruz,	1,338	Wrecked, Body Island, 1866.
Asher Ayres,	221	Burned, Savannah River, 1865.
Indian River,	300	Lost, Florida Coast, 1865.
Orientala,	990	Lost, La Platte River, Nov., 1866.
Cortez,	100	Wrecked, Delaware, Dec., 1866.

Total tonnage, 97,022. Side-wheel Steamers, 88.

Nearly all the vessels contained in the foregoing Tables were registered in the city of New York.

No attempt is made to collect the losses of sailing vessels, nor river steamers.

That the commerce of the sea is carried on at enormous losses, and Marine Insurance Companies must charge enormous premiums, is very evident from the Table of Propellers and Side-wheel Steamers lost during the last ten years.

In preparing these Tables great service was rendered by the "Insurance Gazette Almanac," of New York.

STATEMENT OF THE CONDITION

OF THE

LIFE INSURANCE COMPANIES

FROM OTHER STATES,

TRANSACTING BUSINESS IN THE STATE OF CONNECTICUT.

Statement of the American Popular Life Insurance Company, of New York, as condensed from their Reports to January 1, 1868, *made to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$100,000.00
Amount of Surplus, ...	120,186.73
Whole amount of actual Capital and Surplus,	$220,186.73

ASSETS.

Amount of Cash on hand, ...	$6,546.56
Amount due from Agents, ...	54,392.72
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	
Loans on Collaterals, ...	400.00
On Personal Securities, ...	6,052.17
Invested in Bank Stocks, ...	
Invested in Railroad Stock, ...	
Invested in Railroad Bonds, ...	
Invested in State, City, Town, and County Securities,	
Invested in United States Securities, ...	121,635.00
Amount of Premium Notes, ...	
Deferred Premiums Maturing, ...	26,719.89
All other Assets, ...	4,440.39
	$220,186.73

LIABILITIES.

Losses and Claims acknowledged, ...	$5,055.47
Losses not acted upon, ...	
Amount of Dividends due and unclaimed, . .	
Payable ann. to annuitants, Present value,	
Insured by the Company, $4,376,950 Present value,	69,516.51
Additional Reserve, ...	3,111.49
Capital Stock, ...	100,000.00
All other Liabilities, ...	
Net Liabilities,	$177,683.47

REMARKS.

Unrealized Assets included in the above Statement.

Deferred Premiums maturing, ...	$26,719.89
Due from Agents, ...	54,392.72
	$81,112.61

FRED'K SHONNARD, *Secretary.* B. F. BANCROFT, *President.*
Attorney, L. L. SQUIRE, New Haven.

Statement of the Atlantic Mutual Life Insurance Company, Albany, N. Y., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$110,000.00
Accumulations and Balances treated as Assets,	156,938.93
Whole amount of Assets,	$266,938.94

ASSETS.

Amount of Cash on hand and in Banks,	$18,457.82
Real Estate owned by the Company,	
Loans on Real Estate,	
Loans on Collaterals,	
Invested in Bank Stocks,	
Invested in State, City, Town, and County Securities,	10,000.00
Invested in United States Securities,	140,510.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets, not yet collected,	42,516 21
Commuted Commissions treated as Assets,	
Premium Notes,	27,952.00
Due from Agents, and Premiums due, treated as Assets,	24,709.83
Accrued Rents, Interest, &c. treated as Assets,	2,793.08
All other Assets,	
	$266,938.94

LIABILITIES.

Losses and Claims acknowledged,			
Losses not acted upon,			
Dividends due and unclaimed,			
Payable ann. to annuitants,		Present value,	
Insured by the Company,	$4,313,750	Present value,	$130,935.00
Dividends added to above,		Present value,	
	$4,314,750		
Capital Stock,			110,000.00
All other Liabilities,			230.00
Net Liabilities,			$241,165.00

REMARKS.

Unrealized Assets included in the above Statement.

Premiums not yet collected,	$42,516.21
Premium Notes,	27,952.00
Due from Agents,	24,709.83
Accrued Interest,	2,793.08
	$97,971.12

LOUIS B. SMITH, *Secretary.* ROBERT H. PRUYN, *President.*

Attorney, W. C. WILLIAMS, Cheshire.

Statement of the condition of the Berkshire Life Insurance Company, of Pittsfield, Mass., condensed from their Reports made to the Commissioner of Insurance of Connecticut, to January 1, 1868.

CAPITAL.

Authorized Capital,	$100,000.00	
Amount actually paid in,		$40,000.00
Amount secured, to be paid,		829,398.15
Whole amount of actual Capital and Surplus,		$869,398.15

ASSETS.

Amount of Cash on hand,	$7,476.39
Amount due from Agents,	82,952.61
Amount of Real Estate owned by the Company,	105,489.74
Amount of first Mortgages on Real Estate,	92,000.00
Amount of Loans secured by Collaterals,	3,000.00
Amount of Loans on personal Securities,	27,808.89
Amount invested in Bank Stock,	96,208.00
Amount invested in Railroad Stock,	
Amount invested in Railroad Bonds,	
Amount invested in State, City and County Stocks,	100,000.00
Amount invested in United States Securities,	167,040.62
Amount of Premium Notes,	163,787.88
Amount of deferred Premiums,	12,022.00
Accrued Interest,	11,612.02
Total Assets,	$869,398.15

LIABILITIES.

Amount of Losses acknowledged,		$7,000.00
Amount of Losses unadjusted,		13,000.00
Amount of all other claims against the Company,		
Amount of Cash Dividends unpaid,		43,626.11
Amount of outstanding Risks,	Present Value,	
Net Liabilities,		$63,626.11

REMARKS.

Unrealized Assets included in the Above Statement.

Due from Agents,	$82,952.61
Premium Notes,	163,787.88
Deferred Premiums,	12,022.00
Accrued Interest,	11,612.02
	$270,364.51

BENJ. CHICKERING, *Secretary*. JAMES FRANCIS, *Vice President*.

Attorney, E. B. HOTCHKISS, Berlin.

Statement of Brooklyn Life Insurance Company, of Brooklyn, N. Y., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$125,000.00
Accumulations and Balances treated as Assets, .	568,519.57
Whole amount of Assets, ...	$693,519.57

ASSETS.

Amount of Cash on hand and in Banks, . . .	37,822.66
Loans on Real Estate, ...	74,750.00
Loans on Collaterals, ...	7,000.00
Invested in United States Securities, ...	197,990.00
Deferred Premiums treated as Assets, ...	15,302.59
Premium Notes treated as Assets, ...	257,414.49
Due from Agents, and Premiums due, treated as Assets,	80,784.78
Accrued Rents, Interest, &c., treated as Assets, .	1,300.44
All other Assets, treated as Assets, ...	21,154.61
	$693,519.57

LIABILITIES.

Losses and Claims acknowledged, ...			$9,000.00
Dividends payable to same, ...			
Losses not acted upon, ...			
Dividends payable to Stockholders, . . .			1,200.00
Amount of Dividends due and unclaimed, . . .			
Payable ann. to annuitants,		Present value,	
Insured by the Company,	$7,308,258.00	Present value,	477,206.00
Dividends added to above,	3,801.83	Present value,	3,801.83
Gross Liabilities, ...			
Capital Stock, ...			125,000.00
All other Liabilities, ...			
			$616,207.83

REMARKS.

Unrealized Assets included in the above Statement.

Premium Notes, ...	$257,414.49
Due from Agents and Premiums due, . . .	80,784.78
	$338,199.27

Richard H. Harding, *Secretary.* Christian W. Bouck, *President.*

Attorney, Charles Carlisle, New Haven.

Statement of the Continental Life Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$100,000.00
Accumulations and Balances treated as Assets,	806,157.51
Whole amount of Assets,	$906,157.51

ASSETS.

Amount of Cash on hand and in Banks,	$21,556.24
Real Estate owned by the Company,	
Loans on Real Estate,	7,500.00
Invested in United States Securities,	164,500.00
Deferred Premiums treated as Assets,	283,893.16
Premium Notes treated as Assets,	268,842.61
Due from Agents, and Premiums due, treated as Assets,	139,795.34
Accrued Rents, Interest, &c., treated as Assets,	6,493.81
All other Asses, (Furniture, $11,527.67)	13,576.35
	$906,157.51

LIABILITIES.

Losses and Claims acknowledged,			$10,000.00
Losses not acted upon,			
Losses and Claims resisted,			
Payable ann. to annuitants,		Present value,	
Insured by the Company,	$13,994,350	Present value,	665,202.35
Dividends added to above,		Present value,	
	$13,994,350		
Capital Stock,			100,000.00
All other Liabilities,			137.50
Net Liabilities,			$765,339.85

REMARKS,

Unrealized Assets included in the above Statement.

Deferred Premiums maturing,	$283,893.16
Premium Notes,	268,842.61
Due from Agents,	139,795.34
Accrued Interest and Furniture,	20,070.16
	$712,601.27

R. C. FROST, *Secretary.* JUSTUS LAWRENCE, *President.*

Attorney, GEORGE H. WATERS, Waterbury.

Statement of the Economical Mutual Life Insurance Company, Providence, R. I., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$100,000.00
Accumulations and Balances treated as Assets,	174,365.07
Whole amount of Assets,	$274,365.07

ASSETS.

Amount of Cash on hand and in Banks,	$4,149.77
Loans on Collaterals,	
Loans on Personal Securities,	9,237.98
Invested in State, City, Town and County Securities,	
Invested in United States Securities,	148,525.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	50,535.57
Premium Notes treated as Assets,	
Due from Agents, and Premiums due, treated as Assets,	55,442.00
Accrued Rents, Interest, &c., treated as Assets,	1,096.83
All other Assets,	5,377.92
	$274,365.07

LIABILITIES.

Losses and claims acknowledged,		
Losses not acted upon,		
Insured by the Company,	$159,482,000 Present value,	133,363.19
	$159,482,000	
Capital Stock,		100,000.00
All other Liabilities,		
Net Liabilities,		$233,363.19

REMARKS.

Unrealized Assets included in the above Statement.

Deferred Premiums maturing,	$50,535.57
Due from Agents,	55,442.00
Advanced value of Securities,	8,525.00
	$114,502.57

SIMEON S. BUCKLIN, *President.*

WILLIAM S. POTTER, *Secretary.*

Attorney, N. T. ALLEN, Griswold.

Statement of the Excelsior Life Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$125,000.00
Accumulations and Balances treated as Assets,	26,310.61
Whole amount of Assets,	$151,310.61

ASSETS.

Amount of Cash on hand and in Banks,	$3,714.04
Loans on Real Estate,	4,500.00
Loans on Collaterals,	500.00
Invested in State, City, Town, and County Securities,	
Invested in United States Securities,	111,883.75
Invested in other Stocks, Bonds, and Securities,	
Premiums treated as Assets,	11,760.59
Commuted Commissions treated as Assets,	
Premium Notes treated as assets,	7,713.91
Due from Agents, and Premiums due, treated as Assets,	7,262.34
Accrued Rents, Interest, &c., treated as Assets,	215.65
All other Assets, treated as Assets,	3,760.33
	$151,310.61

LIABILITIES.

Losses and Claims acknowledged,		
Dividends payable to same,		
Losses not acted upon,		
Dividends payable to same,		
Amount of Dividends due and unclaimed,		
Payable ann. to annuitants,	Present value,	None.
Insured by the Company, $841,000	Present value,	No valuation.
Dividends added to above,	Present value,	None.
Capital Stock,		125,000.00
All other Liabilities,		4,371.64
Net Liabilities,		$129,371.64

REMARKS.

Deferred Premiums maturing,	11,760.59
Premium Notes,	7,713.91
Due from Agents,	7,262.34
Accrued Interest,	215 65
	$26,952.49

SIDNEY WARD, *Secretary.* SAMUEL T. HOWARD, *President.*

Attorney, JAMES S. TRYON, Hartford.

Statement of the Germania Life Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$200,000.00
Accumulations and Balances treated as Assets,	1,675,362.90
Whole amount of Assets, . . .	$1,875,362.90

ASSETS.

Amount of Cash on hand and in Banks, . .	$46,986.51
Loans on Real Estate, ...	1,030,550.00
Invested in United States Securities, Market Value,	455,898.75
Deferred Premiums treated as Assets, . . .	211,339.38
Due from Agents, and Premiums due, treated as Assets,	77,948.88
Accrued Interest, &c., ...	24,985.11
Gold Loan, ...	26,154.27
All other Assets, ...	2,500.00
	$1,875,362.90

LIABILITIES.

Losses and Claims acknowledged, ...		$27,500.00
Losses not acted upon, ...		17,000.00
Claims not approved, ...		13,000.00
Amount of Dividends due to Stockholders, .		7,000.00
Payable ann. to annu'ts, ...		
Insured by the Company,	$24,131,486.80	1,338,467.38
Dividends added to above, . .		40,000.00
	$24,131,486.80	$1,442.967.38
Capital Stock, ...		$200,000.00
Currency Collateral for Gold Loan of $25,000, .		33,500.00
Premiums on Gold for all liabilities in Gold, .		30,000.00
All other Liabilities, ...		11,000.00
Net Liabilities, ...		$274,500.00

REMARKS.

Unrealized Assets included in the above Statement.

Deferred Premiums maturing, ...	211,339.38
Due from Agents, and Premiums due, treated as Assets,	77,948.88
Accrued Interest not collected, ...	24,985.11
Advance on Securities, ...	7,390.00
	$321,663.37

Frederick Schwendler, *Vice President.*
Cornelius Doremus, *Secretary.*
Attorney, S. Weitzel, Hartford.

Statement of the Home Life Insurance Company, Brooklyn, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$125,000.00
Accumulations and Balances treated as Assets,	1,518,028.55
Whole amount of Assets,	$1,643,028.55

ASSETS.

Amount of Cash on hand and in Banks,	$50,469.12
Real Estate owned by the Company,	1,310.74
Loans on Real Estate,	180,300.00
Loans on Collaterals,	7,955.33
Invested in Bank Stocks,	
Invested in State, City, Town and County Securities,	210,050.00
Invested in United States Securities,	281,460.00
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets,	41,523.60
Commuted Commissions treated as Assets,	
Premium Notes treated as Assets,	744,103.72
Due from Agents, and Premiums due, treated as Assets,	121,239.98
Accrued Rents, Interest, &c.,	1,116.06
All other Assets,	3,500.00
	$1,643,028.55

LIABILITIES.

Payable ann. to annuitants,		Present value,	
Insured by the Company,	$20,822,076	Present value,	$1,128,342.86
Dividends added to above,	68,912	Present value,	68,912.82
	$20,890,988		
Capital Stock,			125,000.00
All other Liabilities, Dividends to Stockholders,			14,375.00
Net Liabilities,			$1,336,630.68

REMARKS

Unrealized Assets included in Statement.

Deferred Premiums maturing,	$41,623,68
Premium Notes,	744,103.72
Due from Agents,	121,239.90
	$906,867.30

GEO. C. RIPLEY, *Secretary.* WALTER F. GRIFFITH, *President.*
Attorney, PHILIP POND, New Haven.

Statement of the John Hancock Life Insurance Company, Boston, Mass., as condensed from their reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$100,000.00
Accumulations and Balances treated as Assets, .	783,417.82
Whole amount of Assets, ...	$883,417.82

ASSETS.

Amount of Cash on hand and in Banks, . .	$4,877.82
Amount due from Agents, ...	4,024.31
Loans on Real Estate, ...	38,000.00
Loans on Collaterals, ...	5,600.00
Invested in Bank Stocks, ...	46,205.00
Invested in State, City, Town and County Securities,	133,488.75
Invested in United States Securities, . . .	180,294.37
Invested in other Stocks, Bonds and Securities, .	15,127.50
Premium Notes, ...	291,021.08
Premiums due and in course of transmission, .	100,725.50
Deferred Premiums maturing, ...	48,320.40
Accrued Rents, Interest, &c., ...	15,727.09
	$883,417.82

LIABILITIES.

Losses and Claims acknowledged, . . .	$10,000.00
Dividends payable, ...	1,140.65
Capital Stock, ...	100,000.00
Amount Insured, $21,261,936 Present value,	Not reported.
Net Liabilities, ...	$111,669.15

REMARKS.

Unrealized Assets included in Statement.

Due from Agents, ...	$4,924.31
Premium Notes, ...	191,021.08
Premiums in the course of transmission, . . .	100,725.50
Deferred and maturing, ...	48,320.40
Interest accrued, ...	15,727.00
	$459,818.29

George B. Ager, *Secretary.* Geo. P. Sanger, *President.*

Attorney, E. T. Packer, Mystic.

Statement of the Knickerbocker Life Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$100,000.00
Accumulations and Balances treated as Assets,	2,978,455.05
Whole amount of Assets,	$3,078,455.05

ASSETS.

Amount of Cash on hand and in Banks,	$55,979.50
Deferred Premiums treated as Assets,	23,863.94
Real Estate owned by the Company,	13 ,000.00
Loans on Real Estate,	130,870 00
Loans secured by Stocks and Bonds,	239,881.00
Policies of Life Insurance,	268,607.14
Invested in Bank Stocks,	22,200.00
Commuted Commissions,	38,181.25
Invested in Bonds,	12,500.00
Invested in State, City, Town and County Securities,	31,059.00
Invested in United States Securities,	218,219.95
Amount of Premium Notes in course of collection,	552,815.25
Accrued Rents, Interest, &c.,	10,119,41
Premium Notes treated as Assets,	1,386,448.27
Amount of Ledger's Balances,	47,148.13
All other Assets,	26,658.58
	$3,078,455.05

LIABILITIES.

Losses and Claims acknowledged,			
Losses not acted upon,			$106,000.00
All other Liabilities,			15,018.62
Added to Policies,	$104,484.00	Present value,	$46,107.00
Amount Insured,	44,367,309.00	Present value,	2,395,994.40
Capital Stock,			100,000.00
Net Liabilities,			$2,067,120.04

REMARKS.

Unrealized Assets included in the Statement.

Deferred Premiums maturing,	$23,863.94
Commuted Commissions,	38,181.25
Premiums in course of collection,	552,815.25
Accrued Interest,	10,119,41
Premium Notes,	1,386,448.27
	$2,011,428.12

GEO. F. SNIFFEN, *Secretary.* ERASTUS LYMAN, *President.*

Attorney, STEPHEN B. GILBERT, New Haven.

Statement of the Manhattan Life Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL

Amount of Capital paid in, ...	$100,000.00
Accumulations and Balances treated as Assets, .	2,996,006.93
Whole amount of Assets, ...	$3,066,006.93

ASSETS.

Amount of Cash on hand and in Banks, . . .	$53,016.07
Loans on Real Estate, ...	878,380.00
Loans on Collaterals, ...	380,425.00
Invested in Bank Stocks, ...	11,800.00
Invested in State, City, Town, and County Securities,	222,200.00
Invested in United States Securities, ...	485,753.20
Deferred Premiums treated as Assets, . . .	66,990.09
Premium Notes treated as Assets, ...	1,709,428.42
Due from Agents, and Premiums due, treated as Assets,	529,809.54
Accrued Rents, Interest, &c., treated as Assets, .	43,971.13
All other Assets, Furniture, $8,000; items, $2,000 .	10,000.00
	$4,391,773.45

LIABILITIES.

Losses and Claims acknowledged, ...		$73,500.00
Losses not acted upon, ...		127,000.00
Dividends payable to same, ... Amount of Dividends due and unclaimed, .		7,643.72
Insured by Company,	$41,753,469.00 Present value,	2,691.291.08
Dividends added to above,	66,572 03 Present value,	66,572.03
	$41,820,041.03	
Capital Stock, ...		100,000.00
Net Liabilities, ...		$3,066,006.93

REMARKS.

Unrealized Assets included in the above Statement.

Deferred Premiums maturing, ...	$66,990.00
Premium Notes, ...	1,709,428.42
Due from Agents, ...	529,809.54
Accrued interest, &c., ...	52,971.12
	$2,360,199.18

J. S. Halsey, *Secretary.* Henry Stokes, *President.*

Attorney, George S. Lester, New Haven.

Statement of the Massachusetts Mutual Life Insurance Company, Springfield, Mass., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Accumulations and Balances treated as Assets, .	$1,856.917.53
Whole amount of Assets, ...	$1,856,917.53

ASSETS.

Amount of Cash on hand and in Banks, . . .	$29,296.95
Due from Agents, and Premiums due, treated as Assets,	92,504.22
Real Estate owned by the Company, . . .	97,000.00
Loans on Real Estate, ...	583,482.00
Loans on Collaterals, ...	52,875.60
Loans on Personal Securities, ...	21,850.00
Invested in Bank Stocks, ...	33,710.00
Invested in State, City, Town and County Securities,	57,000.00
Invested in United States Securities, . . .	225,750.00
Invested in other Stocks, Bonds and Securities, .	5,000.00
Premium Notes, ...	504,381.45
Accrued Interest, ...	46,816.02
Deferred Premiums treated as Assets, . . .	107,251.29
	$1,856,917.53

LIABILITIES.

Losses and Claims acknowledged, ...	$19,000.00
Losses and Claims unadjusted, ...	8,000.00
Dividends payable, ...	460.00
Insured by the Company, $21,261,936 Present value,	Not rep'd.
Dividend additions, ...	None
	$27,460.00

REMARKS.

Unrealized Assets included in the above Statement.

Due from Agents, ...	$92,504.22
Premium Notes, ...	504,381.45
Accrued Interest, ...	46,816.02
Deferred Premiums maturing, ...	107,251.29
	$750,953.98

F. D. Bacon, *Secretary.* Caleb Rice, *President.*
Attorney, C. C. Kimball, Hartford.

Statement of the Mutual Benefit Life Insurance Company, Newark, N. J., as condensed from their Report to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	
Accumulations and Balances treated as Assets, .	$14,290,088.17
Whole amount of Assets, ...	

ASSETS.

Amount of Cash on hand and in Banks, . .	$439,073.43
Real Estate owned by the Company, ...	113,994.60
Loans on Real Estate, ...	3,617,168.40
Loans on Collaterals, ...	3,251.45
Invested in Bank Stocks, ...	
Invested in State, City, Town and County Securities,	2,713,942.82
Invested in United States Securities, . . .	1,551,400.00
Invested in other Stocks, Bonds and Securities, .	
Deferred Premiums treated as Assets, . . .	
Commuted Commissions treated as Assets, . .	
Premium Notes, ...	5,190,273.33
Due from Agents, and Premiums due, treated as Assets,	58,362.44
Interest accrued, ...	273,114.00
Premiums Receivable, ...	329,506.70
	$14,290,088.17

LIABILITIES.

Losses and Claims acknowledged, ...			$164,750.00
Losses not acted upon, ...			74,700.00
Annually to annuitants,	$369.00	Annuity Fund,	2,532.00
Amount at Risk,	104,516,845	Present value,	8,795.613.00
Dividends declared,	2,113,887		
	$106,630,732		$9,037,595.00

REMARKS.

Unrealized Assets included in the Statement.

Premium Notes, ...	$5,190,273.33
Interest accrued, ...	273,114.00
Premiums Receivable, ...	329,506.70
	$5,792,894.03

Lewis C. Grover, *President.*

Edward A. Strong, *Secretary.*

Attorney, Levi C. Gilbert, New Haven.

Statement of the Mutual Life Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Accumulations and Balances treated as Assets,	$23,995,057.97
Whole amount of Assets, . . .	$23,995,057.97

ASSETS.

Advance on Gold, ...	$23,113.94
Amount of Cash on hand and in Banks, . . .	974,072.50
Real Estate owned by the Company, . . .	937,835.12
Loans on Real Estate, ...	14,709,145.76
Invested in United States Securities, at market value,	5,367,221.06
Deferred Premiums treated as Assets, . . .	1,000,000.00
Due from Agents, and Premiums due, treated as Assets,	754,985.28
Accrued Rents, Interest, &c., treated as Assets, .	217,767.65
All other Assets, treated as Assets, . . .	10,916.66
	$23,995,057.97

LIABILITIES.

Losses and Claims resisted, ...			
Losses not acted upon, ...			$1,255.00
Losses and Claims acknowledged, . . .			194,100.00
Dividends payable to same, ...			33,248.14
Payable to annuitants,	$14,597.32	Present value,	96,948.89
Amount insured,	164,107,469.00	Present value,	*9,204,831.25
Dividends additions,	15,123,457.12	Present value,	7,188,059.88
	$179,245,523.44		
* Exclusive of Future Premiums receivable, .			$16,793,188.16

REMARKS.

Unrealized Assets included in the above Statement.

Deferred Premiums maturing, ...	$1,000,000.00
Due from Agents and Premiums due, . . .	754,985.28
Interest accrued, ...	217,767.65
Advance on Coin, ...	23,113.94
Advance on Securities, ...	366,671.06
	$2,352,537.93

J. M. Stuart, *Secretary.* F. S. Winston, *President.*

Attorney, H P. Hoadley, New Haven.

Statement of the National Life Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$130,000.00
Accumulations and Balances treated as Assets, .	162,388.41
Whole amount of Assets, ...	$292,388.41

ASSETS.

Amount of Cash on hand and in Banks, . .	$8,031.81
Invested in United States Securities, . . .	108,380.00
Deferred Premiums treated as Assets, . . .	26,709.78
Premium Notes treated as Assets, ...	72,873.33
Due from Agents, and Premiums due, treated as Assets,	51,965.49
Accrued Rents, Interest, &c., treated as Assets, .	2,335.80
Interest on Premium Notes, ...	2,550.66
Furniture, $5,229.72; Stationery, $7,500.00; Value of Lease, $6,000.00; Bills Receivable, $1,811.82, .	20,541.54
	$292,388.41

LIABILITIES.

Losses and Claims acknowledged, ...	$2,000.00
Dividends payable to same, ...	
Losses not acted upon, ...	
Payable ann. to annuitants, Present value,	
Insured by the Company, $3,538,235 Present value,	100,652.47
Dividends added to the above, ...	2,569.59
Capital Stock, ...	130,000.00
All other Liabilities, ...	1,000.00
Net Liabilities, ...	$236,222.06

REMARKS.

Unrealized Assets included in the above Statement.

Deferred Premiums maturing, ...	26,709.78
Premium Notes treated as Assets, ...	72,873.33
Due from Agents and Premiums payable, . . .	51,965.49
Interest on Premium Notes, Lease, &c. . . .	20,000.00
	$171,548.60

J. A. MORTIMORE, *Secretary.* EDW. A. JONES, *President.*

Attorney, P. D. WHITMORE, Hartford.

Statement of the Metropolitan Life Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$100,000.00
Accumulations and Balances treated as Assets, .	81,382.14
Whole amount of Assets, ...	$181,382.14

ASSETS.

Amount of Cash on hand and in Banks, . .	$3,744.99
Real Estate owned by the Company, . . .	
Loans on Real Estate, ...	
Loans on Collaterals, ...	
Invested in Bank Stocks, ...	
Invested in State, City, Town, and County Securities,	
Invested in United States Securities, . . .	135,187.50
Invested in other Stocks, Bonds and Securities,	
Deferred Premiums treated as Assets, not yet collected,	23,000.00
Commuted Commissions treated as Assets, .	
Premium Notes, ...	11,294.65
Due from Agents, and Premiums due, treated as Assets,	6,505.00
Accrued Rents, Interest, &c. treated as Assets, .	
All other Assets, ...	1,650.00
	$181,382.14

LIABILITIES.

Losses and Claims acknowledged, . . .			
Losses not acted upon, ...			
Dividends due and unclaimed, ...			
Payable ann. to annuitants,		Present value,	
Insured by the Company,	$809,400	Present value,	Not rep'ed
Dividends added to above,		Present value,	
	$809,400		
Capital Stock, ...			100,000.00
All other Liabilities, for U. S. Securities, . .			26,918.75
Net Liabilities, ...			$126,918.75

REMARKS.

Unrealized Assets included in the above Statement.

Premiums not yet collected, ...	$23,000.00
Premium Notes, ...	11,294.65
Due from Agents, ...	6,505.00
	$40,799.65

J H. TAYLOR, *Secretary.* JAMES R. DOW, *President.*
Attorney, P. D. WHITMORE, Hartford.

Statement of the National Travelers' Life Insurance Company, New York, Accident Department, as condensed from their reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$100,000.00
Accumulations and Balances treated as Assets, .	31,811.80
Whole amount of Assets, ...	$131,811.80

ASSETS.

Amount of Cash on hand and in Banks, . .	$2,308.67
Amount due from Agents, ...	7,538.59
Loans on Real Estate, ...	
Loans on Collaterals, ...	1,568.22
Invested in Bank Stocks, ...	
Invested in State, City, Town and County Securities,	
Invested in United States Securities, . . .	106,000.00
Invested in other Stocks, Bonds and Securities, .	
Lease of Office valued at	7,000.00
Furniture and Fixtures, ...	7,396.32
	$131,811.80

LIABILITIES.

Losses and Claims acknowledged, ...	$1,000.00
Estimated for Reinsurance, ...	14,472.45
All other Liabilities, ...	13,607.75
Capital Stock, ...	100,000.00
Net Liabilities, ...	$129,080.20

REMARKS.

Unrealized Assets included in Statement.

Due from Agents, ...	$7,538.59
Lease of Office, ...	7,000.00
	$14,538.59

J. H. Taylor, *Secretary.* James R. Dow, *President.*

Attorney, P. D. Whitmore, Hartford.

Statement of the condition of the New England Mutual Life Company of Boston, Mass., condensed from the Reports made to the Commissioner of Insurance of Connecticut.

CAPITAL.

Amount of Capital paid in,	none.
Amount of Surplus,	6,220,942.45
Whole amount of actual Capital and Surplus,	$6,220,942.45

ASSETS.

Amount of Cash on hand and in Banks,	$111,620.20
Amount due from Agents,	460,000.00
Real Estate owned by the Company,	445,579.48
Loans on Real Estate,	900,762.50
Loans on Collaterals,	80,000.00
Loans on Personal Securities,	5,475.00
Invested in Bank Stock,	195,434.00
Invested in other Stocks, Bonds and Securities,	303,356.00
Invested in State, City, Town and County Securities,	1,049,461.67
Invested in United States Securities,	611,560.00
Premium Notes treated as Assets,	1,873,497.84
Deferred Premiums treated as Assets,	184,195.76
Total Assets,	$6,220,942.45

LIABILITIES.

Losses and claims acknowledged,	$73,000,	$78,300.00
Losses not acted upon,	5,300,	
All other Liabilities,		
Dividends declared,		814,445.20
Outstanding Risks, $30,090,370,		Present Value not reported
Net Liabilities,		$892,745.20

REMARKS.

Unrealized Assets included in the above Statement.

Due from Agents,	$460,000 00
Premium Notes,	1,873,497.84
Deferred Premiums maturing,	184,195.76
	$2,527,693.60

JAS. M. GIBBENS, *Secretary.* BENJ. S. STEVENS, *President.*

Attorney, CHARLES ROBINSON, New Haven.

Statement of the condition of the New Jersey Mutual Life Company of Newark, N. J., as condensed from their Report to the Commissioner of Insurance.

CAPITAL.

Amount of Capital paid in, ...	$125,000
Amount secured, to be paid, ...	
Accumulations and Balances treated as Assets, .	183,708.54
Whole amount of Assets, ...	$308,708.54

ASSETS.

Amount of Cash on hand and in Banks, ...	$8,753.69
Due from Agents, and Premiums due, treated as Assets,	
Amount of Real Estate owned by the Company, .	
Amount of first Mortgages on Real Estate, .	114,993.91
Loans on Collaterals, ...	28,000.00
Amount of Loans on personal Securities, . .	
Invested in Bank Stocks, ...	5,000.00
Invested in other Stocks, Bonds and Securities, .	
Invested in State, City, Town and County Securities,	27,275.00
Amount invested in United States Securities, .	
Premium Notes, ...	44.441.43
Interest accrued, ...	4,155.03
Amount of Furniture, ...	3,284.65
Premiums deferred and in course of transfer, .	72,804.83
Total Assets, ...	$308,708.54

LIABILITIES.

Losses and Claims acknowledged, ...	
Losses not acted upon, ...	
Amount of all other claims against the Company, .	
Amount of Dividends unpaid, ...	
Amount at Risk, Present value,	
Net liabilities estimated, ...	$63,626.11

REMARKS.

Unrealized Assets included in the Statement.

Premium Notes, ...	$44,441.43
Interest accrued, ...	4,155.03
Premiums deferred and transmitting, ...	72,804,83
	$121,401.29

Wm. M. Simpson, *Secretary.* Jas. P. Bradley, *President.*

Attorney, W. H. D. Callender, Hartford.

Statement of the condition of the New York Life Insurance Company, of New York, condensed from their Reports made to the Commissioner of Insurance of Connecticut.

CAPITAL.

Accumulations and Balances treated as Assets,	$9,159,753.91
Whole amount of actual Capital and Surplus,	$9,159,753.91

ASSETS.

Amount of Cash on hand,	$575,236.54
Amount due from Agents, and due in Office,	406,326.77
Real Estate owned by the Company,	700,125.66
Amount of first Mortgages on Real Estate,	1,072,800.00
Amount of Loans secured by Collaterals,	257,700.00
Amount invested in Bank Stock,	45,955.00
Amount invested in Railroad Bonds,	300,000.00
Amount invested in State Bonds,	22,500.00
Invested in State, City, Town and County Securities,	964,775.00
Invested in United States Securities,	2,855,506.87
Amount of Premium Notes,	1,556,837.47
Interest on Ditto,	44,778.44
All other Assets, Rent,	2,401.96
Deferred Premiums maturing,	346,285.81
Interest due or accrued,	7,624.39
Total Assets,	$9,159,753.91

LIABILITIES.

Amount of Losses acknowledged,	$172,800.00
Scrip due,	5,841.24
Claims against the Company, Scrip for Profits,	66,731.27
Amount Insured, $69,406,477, Present Value,	5,500,000.00
Amount of outstanding Dividends,	988,106.00
Total amount of Liabilities,	$6,733,578.51

REMARKS.

Unrealized Assets included in the above Statement.

Deferred Premiums maturing,	$346,285.81
Interest due or Accrued,	7,624.39
Premium Notes and Interest on Ditto,	1,601,615.91
Due from Agents and Premiums in Office,	406,326.77
	$2,361,852.88

WM. H. BEERS, *Actuary.* MORRIS FRANKLIN, *Vice President.*
Attorney, IRA SHERMAN, Bridgeport.

Statement of the North America Life Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$100,000.00
Accumulations and Balances treated as Assets, .	2,636,305.74
Whole amount of Assets, ...	$2,736.305.74

ASSETS.

Amount of Cash on hand and in Banks, . . .	$88,656.29
Loans on Real Estate, ...	91,660.00
Loans on Collaterals, ... Invested in Bank Stocks, ...	15,900.00
Invested in State, City, Town, and County Securities,	19,997.00
Invested in United States Securities, . . .	664,500.00
Advance on Securities, ...	47,349.91
Deferred Premiums treated as Assets, . . .	605,419.15
Commuted Commissions treated as Assets, .	127,564.98
Premium Notes and Accrued Internst, . . .	767,868.90
Due from Agents, and Premiums due, treated as Assets,	288.612.69
Interest, &c., treated as Assets, ...	46.66
All other Assets, Furniture, ...	18.730.16
	$2,736,305.74

LIABILITIES.

Losses and Claims acknowledged, ...			$44,500.00
Payable ann. to annuitants,		Present value,	
Insured by the Company,	$29,100,562	Present value,	1,954,486.00
Dividends added to above,		Present value,	247,793.76
	$29,100,562		
Capital Stock, ...			100,000.00
All other Liabilities, ...			11.73
Net Liabilities, ...			$2,346,791.49

REMARKS.

Unrealized Assets included in the above Statement.

Deferred Premiums maturing, ...	$605,419.15
Commuted Commissions, ...	127,564.98
Premium Notes and Accrued Interest, ...	767,868.99
Due from Agents, ...	288,612.69
	$1,689,465.72

D. M. Merril, *Secretary.* N. D. Morgan, *President.*

Attorney, Joel Halkins, New Haven.

Statement of the Security Life and Annuity Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in, ...	$110,000.00
Accumulations and Balances treated as Assets,	1,176,390.24
Whole amount of Assets, . . .	$1,286,390.24

ASSETS.

Amount of Cash on hand and in Banks, . . .		$17,624.81
Loans on our own Policies, ...		11,735.84
Invested in State, City, Town and County Securities,		4,000.00
Invested in United States Securities, . . .		170,920.00
Deferred Premiums treated as Assets, . . .		184,381.26
Premium Notes treated as assets, ...		615,661.19
Due from Agents, and Premiums due, treated as Assets,		261,687.83
Accrued Rents, Interest, &c., treated as Assets,	$2,656.92	17,722.39
		$1,286,390.24

LIABILITIES.

Losses and Claims acknowledged, . . .			$19,000.00
Dividends payable to Stockholders, . . .			450.00
Payable ann. to annu'ts,		Present value,	
Insured by Company,	$17,670,049.00	Present value,	934,451.00
Dividends added,		Present value,	
	$17,670,043.00		
Capital Stock, ...			110,000.00
Net Liabilities, ...			$1,063,901.00

REMARKS.

Unrealized Assets included in the above Statement.

Deferred Premiums maturing, ...	$184,381.26
Due from Agents, and Premiums due, . . .	261,687.83
Interest accrued, ...	2,656.92
Advance on Securities, ...	14,920.00
	$478,646,01

Isaac H. Allen, *Secretary.* Robert L. Chase, *President.*

Attorney, Wales French, New Haven.

Statement of the State Mutual Life Insurance Company, Worcester, Mass., as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	None.
Accumulations and Balances treated as Assets,	$816,296.89
Whole amount of accumulations,	$816,296.89

ASSETS.

Amount of Cash on hand and in Banks,	$8,773.31
Due from Agents,	15,801.10
Real Estate owned by the Company,	28,180.55
Loans on Real Estate,	75,575 00
Loans on Collaterals,	7,500.00
Loans on Personal Securities,	32,275.00
Invested in Bank Stocks,	113,300.00
Invested in Bonds,	9,558.50
Invested in State, City, Town and County Securities,	230,000.00
Invested in United States Securities,	260,000.00
Amount of Premium Notes,	19,532.33
All other Assets, Balance of Premiums,	15,801.10
Total Assets,	$816,296.89

LIABILITIES.

Losses and Claims acknowledged,	$12,600.00
Losses not acted upon,	8,000.00
Dividends payable,	4,244.00
Amount Insured, $5,143,398.66 Present value,	Not reported.
Net Liabilities reported,	$24,844.00

REMARKS.

Unrealized Assets included in the Statement.

Due from Agents,	$15,801.10
Premium Notes,	19,532.33
Premiums in course of collection,	15,801.10
	$51,134.53

Clarendon Harris, *Secretary.* Isaac Davis, *President.*

Attorney, Wm. S. Camp, Middletown.

Statement of the Universal Life Insurance Company, New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000.00
Accumulations and Balances treated as Assets,	184,971.51
Whole amount of Assets,	$384,971.51

ASSETS.

Amount of Cash on hand and in Banks,	$22,765.02
Loans on Real Estate,	14,500.00
Due from Agents,	48,210.03
Loans on Collaterals,	
Interest due,	2,411.50
Invested in Bank Stocks,	
Invested in State, City, Town, and County Securities,	36,887.50
Invested in United States Securities,	210,687.50
Deferred Premiums treated as Assets,	45,488.10
All other Assets, Office Furniture,	3,852.70
Interest due,	169.16
	$384,971.51

LIABILITIES.

Losses and Claims acknowledged,		$17,000.00
Losses not acted upon,		5,000.00
Insured by Company,	$5,967,890.00	Present value, Not rep'ed
	$5,967,890.00	
Capital Stock,		200,000.00
Net Liabilities,		$222,000.00

REMARKS.

Unrealized Assets included in the above Statement.

Deferred Premiums maturing,	$45,488.10
Interest accrued,	2,411.50
Due from Agents,	48,210,03
	$96,109.63

JOHN H. BEWLEY, *Secretary.* WM. WALKER, *President.*

Attorney, E. W. BROWN, New Haven.

Statement of the United States Casualty Company, Trenton, New Jersey, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$100,000.00
Accumulations and Balances treated as Assets,	51,731.83
Whole amount of Assets,	$151,731.83

ASSETS.

Amount of Cash on hand and in Banks,	$11,264 08
Loans on Collaterals,	1,216·36
Invested in United States Securities, at market value,	107,500.00
Invested in Stocks, U. S. Casualty, unsold,	26,800.00
Deferred Premiums treated as Assets,	
Premium Notes treated as Assets,	
Due from Agents, and Premiums due, treated as Assets,	2,080.94
All other Assets, (Furniture,)	2,870.45
	$151,731.83

LIABILITIES.

Losses and Claims acknowledged,	$7,000.00
Dividends payable to same,	
Losses not acted upon,	
Payable ann. to annuitants, Present value,	
Amount insured, . $15,143,900 Reinsurance,	25,822.12
Dividends added to the above,	
Capital Stock,	100,000.00
All other Liabilities,	1,500.00
Net Liabilities,	$134,322.12

REMARKS.

Unrealized Assets included in the above Statement.

U. S. Casualty Stock unsold,	$26,800.00
Premiums due,	2,080.94
Premium Notes treated as Assets,	
Due from Agents and Premiums payable,	
Interest on Premium Notes, Lease, &c.	
	$28,880.94

Frank Markoe, *Secretary.* E. C. Fisher, *President.*

Attorney, Charles W. Cook, Hartford.

Statement of the Widows and Orphans Benefit Life Company, of New York, as condensed from their Reports to January 1, 1868, *to the Commissioner of Insurance.*

CAPITAL.

Amount of Capital paid in,	$200,000.00
Accumulations and Balances treated as Assets,	580,812.96
Whole amount of Assets,	$780,812.96

ASSETS.

Amount of Cash on hand and in Banks,	$73,662.95
Real Estate owned by the Company,	
Loans on Real Estate,	90,500.00
Loans on Collaterals,	674.73
Invested in United States Securities,	463,577.50
Deferred Premiums treated as Assets,	81,648.47
Commuted Commissions treated as Assets,	21,831.00
Due from Agents, and Premiums due, treated as Assets,	46,134.96
Accrued Rents, Interest, &c.,	2,783.35
All other Assets,	
	$780,812.96

LIABILITIES.

Losses and Claims acknowledged,	$11,656.19
Capital Stock,	200,000.00
Annuity Fund,	2,500.00
Amount of Dividends,	75,441.48
Insured by the Company, $9,442,341.00 Reinsurance,	468,498.42
All other Liabilities,	1,414.34
Net Liabilities,	$759,510.43

REMARKS.

Unrealized Assets included in Statement.

Deferred Premiums maturing,	$81,648.47
Due from Agents,	46,134.96
Commuted Commissions,	21,831.00
Advanced Value of Securities,	24,000.00
	$173,614.43

Charles H. Raymond, *President.*

Robert A. Grannis, *Secretary.*

Attorney, H P. Hoadley, New Haven.

CONDENSED STATEMENT

OF THE

FIRE AND LIFE INSURANCE COMPANIES,

AND TABLES OF THE

EXPECTATION OF LIFE

AND

INTEREST ON MONEY.

THE INTEREST AND OTHER TABLES.

The following tables have been prepared and included in this Report for the convenience of persons having occasion to make computations connected with Life Insurance, and with almost daily business transactions; and also to show the effect of high and low rates of interest on borrowers, lenders, savings, and Life Insurance Companies.

Such tables are frequently needed for reference by courts, attorneys, judges, and juries, as well as by citizens.

A reference to Table No. 2 illustrates the effect of low and high rates of interest on the accumulations of Life Insurance Companies, as expressed on a further page; for instance, $1.00 per annum, compounded at 5 per cent. interest, would in 32 years amount to $75.29—while the same sum compounded for the same time at 7 per cent. per annum would amount to $110.21—therefore for each $10.00 per annum the amount would be $1,102.10 at 7 per cent. interest, while it would be but $752.90 at 5 per cent. per annum.

Of course the lower the rate of interest the higher the rates of premium must be. If the American Life Insurance Companies are forced to make their computations upon the low rate of interest common in England, they must keep up high rates of premiums; at the same time, like as in everything else in this country, Life Insurance Companies find a way to overcome an arbitrary law or practice, and they do it now by making large dividends, and thus compensating the insured for *overcharging* them for their premiums.

In Fire Insurance the matter of impaired capital seems in other States to receive attention, and in the State of New York especially.

A disastrous season not unfrequently impairs the capitals of Fire Insurance Companies, and such is the law of New York, that in all cases where the capital is impaired 25 per cent., the amount must be made up by stockholders, or the capital reduced, unless it would reduce it below $150,000. In the case of one company from another State, having a capital of $300,000, it is stated that the capital became impaired, and the Commissioner of New York revoked his certificates of authority to transact business in that State—that subsequently the capital was reduced one-half, to wit, to $150,000, whereupon the certificates of authority were renewed.

It is difficult to see wherein the public were made safer by forcing the company to reduce its capital stock—for the liabilities were not reduced, and the insured were no safer after the reduction of capital than before.

It should be remembered that there is no limit to the amount of risks an Insurance Company may take, and so far as capital is concerned it is a mere indemnity, for every company is expected to so manage its affairs as to save its capital whole; but in case misfortunes use up a portion of it one year, the next year may repair the loss. At all events, so long as the capital is not reduced below the point allowed by law, it matters not to the public, as regards security, whether or not the ceremony of being ruled out of a State is performed, and then let back again, when not the slightest change in their actual means for paying losses had been made by the operation.

COMPARATIVE STATEMENT OF ALL THE LIFE INSURANCE COMPANIES OF OTHER STATES, TRANSACTING BUSINESS IN THIS STATE—January 1, 1868.

COMPANIES.	Cash Capital.	Gross Assets.	Assets not Realized, Premium Notes, &c.	Gross Assets, Deducting Capital.	Amount at Risk.	Per cent. of Assets on Liabilities, capital deducted.
American Popular,	100,000	220,186	$81,112.61	$120,168	4,370,950	new
Atlantic Mutual,	110,000	266,938	97,971.12	156,938	4,313,750	new
Berkshire Life,	40,000	869,398	270,364.00	829,398	7,876,185	10½ per cent
Brooklyn Life,	125,000	693,519	338,199.27	568,519	7,308,258	7¾ per cent
Continental Life,	100,000	906,157	712,601.27	806,157	13,994,350	6 per cent
Economical Life,	100,000	274,365	114,502.57	174,365	2,921,265	6 per cent
Excelsior Life,	125,000	151,310	26,952.95	26,310	841,000	new
Germania Life,	200,000	1,875,362	321,663.37	1,675,362	34,131,486	3 per cent
Home Life,	125,000	1,643,028	906,367.26	1,518,028	20,822,076	7 per cent
Knickerbocker,	100,000	3,078,455	2,011,428.12	2,978,455	44,367,209	6¼ per cent
Manhattan Life,	100,000	3,066,006	2,360,199.18	2,966,006	41,753,469	7 per cent
John Hancock,	100,000	883,417	459,818.00	784,417	10,008,658	7¾ per cent
Mutual Life,	—	23,995,057	2,352,537.93	23,995,057	179,230,926	13⅓ per cent
Mutual Benefit,	—	14,290,088	5,792,894.03	14,290,088	115,650,800	12½ per cent
Massachusetts Mutual Life,	—	1,856,917	750,953.00	1,856,917	21,261,936	8½ per cent
National Life,	130,000	292,388	177,548.60	162,388	3,538,235	4¾ per cent
Metropolitan Life,	100,000	181,382	40,799.65	81,382	809,400	new
New England Mutual Life,	—	6,220,942	2,527,693.00	6,220,942	62,650,700	10 per cent
New York Life,	—	9,159,753	2,360,852.88	9,159,753	69,406,477	11¾ per cent
New Jersey Mutual Life,	125,000	308,708	121,401.00	183,708	3,425,650	new
North America Life,	100,000	2,736,307	1,089,465.72	2,636,307	29,100,562	11⅓ per cent
Security Life,	110,000	1,286,390	478,646.00	1,176,390	17,670,049	6½ per cent
State Mutual Life,	—	816,296	51,134.00	816,296	5,143,398	16 per cent
Universal Life,	200,000	384,971	96,109.63	184,971	5,967,890	new
Widows and Orphans' Life,	200,000	780,512	173,614.43	580,520	9,442,341	6 per cent
United States Casualty,	100,000	151,731	28,880.94	51,731	15,143,900	short risks
	2,390,000	76,389,583	24,748,200.53	74,102,183	731,351,620	Total at risk.

STATEMENT OF THE FIRE INSURANCE COMPANIES OF OTHER STATES DOING BUSINESS IN CONNECTICUT.

NAMES OF COMPANIES.	Gross Assets.	Received for Premiums.	Paid for Losses.	Estimated Surplus over Claims, Reinsurance and Capital.	Amount of Fire Risks.	Paid up Capital.
Ætna Fire, New York	$403,338	$131,100	$38,270	$50,000	$17,198,208	$300,000
Albany City Fire, Albany	351,877	353,900	223,882	10,000	24,743,530	200,000
Atlantic Fire and Marine, Providence	298,126	124,600	102,100	10,000	10,482,500	200,000
Atlantic Fire, Brooklyn	505,530	281,500	249,000	40,000	41,209,684	300,000
Agricultural, Watertown	355,136	131,760	66,725	130,000	25,684,820	100,000
Baltic Fire, New York	279,146	253,000	205,000	None.	41,209,684	200,000
Bay State, Worcester	152,578	40,350	8,500	5,000	7,050,600	Mutual.
Capital City, Albany	261,460	51,000	21,675	25,000	2,815,475	200,000
Continental, New York	1,814,590	678,950	285,890	930,000	102,721,188	500,000
Commerce, Albany	568,873	313,680	182,530	17,000	32,017,581	400,000
Corn Exchange, New York	505,605	340,000	240,360	None.	34,596,794	400,000
Enterprise Fire and Marine	538,372	781,500	400,500	30,000	59,479,365	300,000
Excelsior, New York	344,469	273,930	193,460	25,000	28,922,376	200,000
Firemen's, New York	361,036	170,100	81,125	65,000	21,818,966	200,000
Fulton, New York	294,631	210,500	131,245	5,000	29,643,965	200,000
Germania, New York	876,815	593,700	283,550	95,000	55,642,195	500,000
Girard, Philadelphia	357,294	136,900	36,100	75,000	3,222,262	200,000
Glen's Falls, Glen's Falls	418,329	167,850	88,600	106,000	17,073,765	200,000
Hanover, New York	606,634	378,350	232,750	25,000	33,138,664	400,000
Holyoke Mutual, Salem	136,246	20,600	6,200	50,000	10,600,500	Mutual.
Home Fire, New York	3,623,896	2,187,570	1,287,150	390,000	172,244,695	2,000,000
Howard, New York	683,197	175,950	49,280	95,000	23,046,400	500,000
Hope Fire, Providence	187,424	96,100	60,300	None.	7,420,928	150,000
Insurance Company of North America, Philadelphia	2,056,412	1,120,600	480,000	930,000	105,650,800	500,000
International, New York	1,059,780	1,163,025	898,220	10,000	76,410,720	500,000
Lamar, New York	509,963	217,380	84,133	120,000	25,535,366	300,000
Lenox, New York	221,662	94,500	41,900	24,000	9,343,986	150,000

Lorillard, New York	1,496,235	739,400	361,000	215,000	89,386,110	1,000,000
Manhattan, New York	1,003,098	1,032,025	734,100	180,000	66,316,080	500,000
Market, New York	509,684	307,300	127,100	150,000	42,242,550	200,000
Metropolitan, New York	548,440	225,249	710,900	5,000	37,151,280	300,000
Merchants', Providence	337,631	170.310	8,000	20,000	10,850,265	200,000
Merchants' and Farmers' Mutual, Worrester	200,524	48,050	12,500	50,000	10,500.600	Mutual
Narragansett, Providence	740,354	431,130	314,970	20,000	21,319,990	500,000
National, Boston	811,508	418,225	239,450	150,000	31,027,775	300,000
Niagara, New York	1,371,315	689,700	382,480	60,000	70,473,230	1,000,000
North America, New York	702,162	484,430	311,000	40,000	47,608,340	500,000
Phœnix, Brooklyn	1,558,567	1,590,420	1,152,300	95,000	85,716,474	1,000,000
Providence Washington, Providence	370,652	180,384	100,670	60,000	14.766,502	200,000
People's, Worcester	487,766	300,262	174,605	100,000	23,362,190	200,000
Republic, New York	650,880	364,780	253,650	180,000	26,026,545	300,000
Roger Williams, Providence	201,358	115,250	64,535	15,000	6,734,630	100,000
Security, New York	1,477,677	1,693,420	1,073,150	35,000	113,702,312	1,000,000
Springfield Fire and Marine, Springfield	781,067	475,000	284,500	36,000	44,650,700	500,000
Standard, New York	325,799	152,600	55,260	70,000	21,054,390	200,000
Tradesmen's, New York	302,819	224,500	111,500	25,000	28,050,000	150,000
Union Fire, Baltimore	168,501	65,680	15,500	10,000	8,960,000	100,000
United States Fire and Marine, Baltimore	431,276	187,960	156,970	10,000	11,098,813	250,000
Westchester County, New Rochelle	230,242	81,114	17,907	40,000	13,773,100	Mutual.
Western Fire, Buffalo	594,230	557,190	345,382	145,000	36,265,548	300,000
Yonkers, New York	734,386	403,990	194,580	50,000	41,518,686	500,000
Total	$33,808,590	$21,426,764	$13,180,544	$5,023,000	$1,921,481,127	$18,400,000

*Table showing the expectation of life at each age, as derived from Statistics of the towns of Northampton and Carlisle, England, and American Tables of mortality.**

Age.	Northampton.	Carlisle.	U. States.	Age.	Northampton.	Carlisle.	U. States.
1	32.74	44.68		51	17.50	20.39	20.20
2	37.79	47.55		52	17.02	19.68	19.49
3	39.55	49.82		53	16,54	18.97	18.79
4	40.58	50 76		54	16.06	18.28	18.09
5	40.84	51.25		55	15.58	17.58	17.40
6	41.07	51.17		56	15.10	16.89	16.72
7	41.03	50.80		57	14.63	16.21	16.05
8	40.79	50.24		58	14.15	15.55	15.39
9	40.36	49.57		59	13.68	14.92	14.74
10	39.78	48.82	48.72	60	13.21	14.34	14.09
11	39.14	48.04	48.08	61	12.75	13.82	13.47
12	38.49	47.27	47.44	62	12.28	13.31	12.86
13	37.83	46.51	46.82	63	11.81	12.81	12.26
14	37.17	45.75	46.16	64	11.35	12.30	11.68
15	36.51	45.00	45.50	65	10.88	11.79	11.10
16	35.85	44.27	44.85	66	10.42	11.27	10.54
17	35.20	43.57	44.19	67	9.96	10.75	10.00
18	34.58	42.87	43.53	68	9.50	10.23	9.48
19	33.99	42.17	42.87	69	9.05	9.70	8.98
20	33.43	41.46	42.20	70	8 60	9.18	8.48
21	32.90	40.75	41.53	71	8.17	8.65	8.00
22	32.39	40.04	40.85	72	7.74	8.16	7.54
23	31.88	39.31	40.17	73	7.33	7.72	7.10
24	31.36	38.59	39.49	74	6.22	7.33	6.68
25	30.85	37.86	38.81	75	6.54	7.01	6.28
26	30.33	37.14	38.11	76	6.18	6.69	5.88
27	29.82	36.41	37.43	77	5.83	6.40	5.48
28	29.30	35.69	36.73	78	5.48	6.12	5.10
29	28.79	35.04	36.03	79	5.11	5.80	4.74
30	28.27	34.30	35.33	80	4.75	5.51	4.38
31	27.76	33.68	34.62	81	4.41	5.21	4.04
32	27.24	33.03	33.93	82	4.09	4.93	3.71
33	26.72	32.36	33.21	83	3.80	4.65	3.39
34	26.20	31.68	32.50	84	3.58	4.39	3.08
35	25.68	31.00	31.78	85	3.37	4.12	2.77
36	25.16	30.32	31.07	86	3.19	3.90	2.47
37	24.64	29.64	30.35	87	3.04	3.71	2.19
38	24.12	28.96	29.62	88	2.86	3.59	1.93
39	23.60	28.28	28.90	89	2.66	3.47	1.69
40	23.08	27.61	28.18	90	2.41	3.28	1.42
41	22.56	26.97	27.45	91	2.09	3.26	1.19
42	22.04	26.34	26.72	92	1.75	3.37	.98
43	21.54	25.71	25.99	93	1.37	3.48	.80
44	21.03	25.09	25.27	94	1.05	3.53	.64
45	20.52	24.46	24.54	95	.75	3.50	.50
46	20.02	23.82	23.80	96	.50	3.46	—
47	19.51	23.17	23.08	97	—	3.28	—
48	19.00	22.50	22.36	98	—	3.07	—
49	18.49	21.81	21.63	99	—	2.77	—
50	17.99	21.11	20.91	100	—	2.28	—

* The U. S. Table, as prepared by Mr. Sheppard Homans.

Table Showing the Present Value of $1.00 *Principal per Annum, Discounted for any Number of Years, at the rcte of* 5, 6 *and* 7 *per cent. Interest per Annum.*

Years.	5 per cent.	6 per cent.	7 per cent.	Years.	5 per cent.	6 per cent.	7 per cent.
1	$ .95	$ .94	$ .93	31	$15.59	$13.92	$12.53
2	1.85	1.83	1.80	32	15.80	14.08	12.64
3	2.72	2.67	2.62	33	16.00	14.23	12.75
4	3.54	3.46	3.38	34	16.19	14.36	12.85
5	4.32	4.21	4.10	35	16.37	14.49	12.94
6	5.07	4.91	4.76	36	16.54	14.62	13.03
7	5.78	5.58	5.38	37	16.71	14.73	13.11
8	6.46	6.20	5.97	38	16.86	14.84	13.19
9	7·10	6.80	6.51	39	17.01	14.94	13.26
10	7.72	7.36	7.02	40	17.15	15·04	13.33
11	8.30	7.88	7.49	41	17.29	15.13	13.39
12	8.86	8.38	7.94	42	17.42	15.22	13.45
13	9.39	8.85	8.35	43	17.54	15.30	13.50
14	9.89	9.29	8.74	44	17.66	15.38	13.55
15	10.37	9.71	9.10	45	17.77	15.45	13.60
16	10.83	10.10	9.44	46	17.88	15.52	13.65
17	11.27	10.47	9.76	47	17.98	15.58	13.69
18	11.68	10.82	10.05	48	18.07	15.65	13.73
19	12.08	11.15	10.33	49	18.16	15.70	13.76
20	12.46	11.46	10.59	50	18.25	15.76	13.80
21	12.82	11.76	10.83	51	18.33	15.81	13.83
22	13.16	12.04	11.06	52	18.41	15.86	13.86
23	13.48	12.30	11.27	53	18.49	15.90	13.88
24	13.79	12.55	11.46	54	18.56	15.94	13.91
25	14.09	12.78	11.65	55	18.63	16.00	13.93
26	14.37	13.00	11.83	56	18.69	16.02	13.96
27	14.64	13.21	11.98	57	18.76	16.06	13.98
28	14.89	13.40	12.13	58	18.81	16.09	14.00
29	15.14	13.59	12.27	59	18.87	16.13	14.02
30	15.37	13.76	12.40	60	18.92	16.16	14.03

Table showing the Amount of $1.00 *per annum Principal, compounded Annually for any number of Years to* 71, *at the rate of* 5, 6, *and* 7 *per cent. per annum.*

Years.	5 per cent.	6 per cent.	7 per cent.	Years.	5 per cent.	6 per cent.	7 per cent.
1	$1.00	$1.00	$1.00	37	101.62	$127.36	$160.33
2	2.05	2.06	2.07	38	107.70	135.90	172.56
3	3.15	3.18	3.21	39	114.09	145.05	185.64
4	4.31	4.37	4.43	40	120.79	154.76	199.63
5	5.52	5.63	5.75	41	127.83	165.04	214.60
6	6.80	6.97	7.15	42	135.23	175.95	230.63
7	8.14	8.39	8.65	43	142.99	187.50	247.77
8	9.54	9.89	10.25	44	151.14	199.75	266.12
9	11.02	11.54	11.97	45	159.70	212.74	285.74
10	12.57	13.18	13.81	46	168.68	226.50	306.75
11	14.20	14.97	15.78	47	178.11	241.09	329.22
12	15.91	16.86	17.88	48	188.02	256.56	353.27
13	17.71	18.88	20.14	49	198.42	272.95	379.00
14	19.59	21.00	22.55	50	209.34	290.33	406.52
15	21.57	23.27	25.12	51	220.81	308.75	435.98
16	23.65	25.67	27.88	52	232.85	328.28	467.50
17	25.84	28.21	30.84	53	245.49	348.97	501.23
18	28.13	30.90	33.99	54	258.77	370.91	537.31
19	30.53	33.75	37.37	55	270.71	394.17	575.92
20	33.06	36.78	40.99	56	287.34	418.82	617.24
21	35.71	40.00	44.86	57	302.71	444.95	661.45
22	38.50	43.39	49.00	58	318.85	472.64	708.75
23	41.42	46.99	53.43	59	335.79	502.00	759.36
24	44.50	50.81	58.17	60	353.78	533.28	813.52
25	47.72	54.86	63.24	61	372.26	566.11	871.46
26	51.11	59.15	68.67	62	391.87	601.08	933.46
27	54.65	63.70	74.48	63	412.46	638.40	999.81
28	58.40	68.52	80.69	64	434.09	677.43	1,070.79
29	62.32	73.63	87.34	65	456.07	719.08	1,146.75
30	66.43	79.05	94.40	66	480.63	763.22	1,228.02
31	70.76	84.80	102.07	67	505.66	810.02	1,314.98
32	75.29	90.88	110.21	68	531.95	859.62	1,408.03
33	80.06	97.34	118.93	69	559.55	912.20	1,507.60
34	85.06	104.18	128.25	70	588.52	967.93	1,614.13
35	90.32	111.43	138.33	71	618.95	1,027.00	1,728.12
36	95.83	119.12	148.91				

Table showing the present value of $1.00, *payable at the end of any of the years named, discounted at the rate of* 5, 6, *and* 7 *per cent. per annum.*

Years.	5 per cent.	6 per cent.	7 per cent.	Years.	5 per cent.	6 per cent.	7 per cent.
1	.95	.94	.93	26	.28	.21	.17
2	.90	.88	.87	27	.26	.20	.16
3	.86	.83	.81	28	.25	.19	.15
4	.82	.79	.76	29	.24	.18	.14
5	.78	.74	.71	30	.23	.17	.13
6	.74	.70	.66	31	.22	.16	.12
7	.71	.66	.62	32	.20	.15	.11
8	.67	.62	.58	33	.19	.14	.10
9	.64	.59	.54	34	.19	.13	.10
10	.61	.55	.50	35	.18	.13	.9
11	.58	.52	.47	36	.17	.12	.8
12	.55	.49	.44	37	.16	.11	.8
13	.53	.46	.41	38	.15	.10	.7
14	.50	.44	.38	39	.14	.10	.7
15	.48	.41	.36	40	.14	.9	.6
16	.45	.39	.33	41	.13	.9	.6
17	.43	.37	.31	42	.12	.8	.5
18	.41	.35	.29	43	.12	.8	.5
19	.39	.33	.27	44	.11	.7	.5
20	.37	.31	.25	45	.11	.7	.4
21	.35	.29	.24	46	.10	.6	.4
22	.34	.27	.22	47	.10	.6	.4
23	.32	.26	.21	48	.9	.6	.3
24	.31	.24	.19	49	.9	.5	.3
25	.29	.23	.18	50	.8	.5	.3

This table, to be strictly accurate, should be carried out in decimals, but as that is not practicable for the present purpose, the round cent is continued for several years.

The figures illustrate the effect of low rates of interest—for instance, $1.00 discounted for 1 year at 5 per cent. interest, is worth $0.95, while $1.00 discounted for 1 year at 7 per cent. interest, is worth but 93 cents.

Table showing the Amount of $1.00 *Principal compounded for the Years named, at the rate of* 5, 6, *and* 7 *per cent. per annum.*

Years.	5 per cent.	6 per cent.	7 per cent.	Years.	5 per cent.	6 per cent.	7 per cent.
1	$1.05	$1.06	$1.07	37	$6.08	$8.63	$12.22
2	1.10	1.12	1.14	38	6.38	9.15	13.07
3	1.15	1.19	1.22	39	6.70	9.70	13.99
4	1.21	1.26	1.31	40	7.03	10.28	14.97
5	1.27	1.33	1.40	41	7.39	10.90	16.02
6	1,34	1.41	1.50	42	7.76	11.55	17.14
7	1.40	1.50	1.60	43	8.14	12.25	18.34
8	1.47	1.59	1.71	44	8.55	12.98	19.62
9	1.55	1.68	1.83	45	8.98	13.76	21.00
10	1.62	1.79	1.96	46	9.43	14.59	22.47
11	1.71	1.89	2,10	47	9.90	15.46	24.04
12	1.79	2.01	2,25	48	10.40	16.39	25.72
13	1.88	2.13	2.40	49	10.92	17.37	27.52
14	1.97	2.26	2.57	50	11.46	18.42	29.45
15	2.07	2.39	2.75	51	12.04	19.52	31.51
16	2.18	2.54	2.95	52	12.64	20.69	33.72
17	2.29	2.69	3.15	53	13.27	21.93	36.08
18	2.40	2.85	3.37	54	13.93	23.25	38.61
19	2.52	3.02	3.61	55	14.63	24.65	41.31
20	2.65	3.20	3.86	56	15.36	26.12	44.20
21	2.78	3.39	4.14	57	16.13	27.69	47.30
22	2.92	3.60	4.43	58	16.94	29.35	50.61
23	3.07	3.81	4.74	59	17.78	31.12	54.15
24	3.22	4.04	5.07	60	18.67	32.98	57.94
25	3.38	4.29	5.42	61	19.61	34.96	62.00
26	3 55	4.54	5,80	62	20.59	37.06	66.34
27	3.73	4 82	6.21	63	21.62	39.28	70.98
28	3.92	5.11	6.64	64	22.70	41.64	75.95
29	4.11	5.41	7.11	65	23.83	44.14	81.27
30	4.32	5.74	7.61	66	25.03	46.79	86.96
31	4.53	6.08	8.14	67	26.28	49.60	93.04
32	4.76	6.45	8.71	68	27.59	52.57	99.56
33	5.00	6.84	9.32	69	28.97	55.73	106.53
34	5.25	7.25	9.97	70	20.42	59·07	113.98
35	5.51	7.68	10.67	71	31.94	62.62	121.96
36	5.79	8.14	11.42	72	33.54	66.37	130.50

Table of Interest at the Rate of Six per cent. Per Annum,

IN DAYS.

$1.00		$2.00		$3.00		$4.00		$5.00		$6.00		$7.00		$8.00		$9.00		$10.00	
Days.	Int.	Days.	Int.	Days.	Int.	Days.	Int.	Days.	Int.	Days.	Int.	Days.	Int.	Days.	Int.	Days.	Int.	Days.	Int.
60	.01	30	.01	20	.01	15	.01	12	.01	10	.01	9	.01	8	.01	7	.01	6	.01
120	.02	60	.02	40	.02	30	.02	24	.02	20	.02	18	.02	15	.02	14	.02	12	.02
180	.03	90	.03	60	.03	56	.03	37	.03	30	.03	26	.03	23	.03	20	.03	18	.03
240	.04	120	.04	80	.04	60	.04	44	.04	40	.04	38	.04	30	.04	27	.04	24	.04
300	.05	150	.05	100	.05	74	.05	62	.05	50	.05	46	.05	38	.05	33	.05	30	.05

Table of Interest at the Rate of Interest at Six per cent. per Annum,

IN MONTHS.

$1.00		$2.00		$3.00		$4.00		$5.00		$6.00		$7.00		$8.00		$9.00		$10.00		$11.00	
Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.
1	0½	1	1	1	1½	1	2	1	2½	1	3	1	3½	1	4	1	4½	1	5	1	5½
2	1	2	2	2	3	2	4	2	5	2	6	2	7	2	8	2	9	2	10	2	11
3	1½	3	3	3	4½	3	6	3	7½	3	9	3	10½	3	12	3	13½	3	15	3	16½
4	2	4	4	4	6	4	8	4	10	4	12	4	14	4	16	4	18	4	20	4	22
5	2½	5	5	5	7½	5	10	5	12½	5	15	5	17½	5	20	5	22½	5	25	5	27½
6	3	6	6	6	9	6	12	6	15	6	18	6	21	6	24	6	27	6	30	6	33
7	3½	7	7	7	10½	7	14	7	17½	7	21	7	24½	7	28	7	31½	7	35	7	38½
8	4	8	8	8	12	8	16	8	20	8	24	8	28	8	32	8	36	8	40	8	44
9	4½	9	9	9	13½	9	18	9	22½	9	27	9	31½	9	36	9	40½	9	45	9	49½
10	5	10	10	10	15	10	20	10	25	10	30	10	35	10	40	10	45	10	50	10	55
11	5½	11	11	11	16½	11	22	11	27½	11	33	11	38½	11	44	11	49½	11	55	11	60½
12	6	12	12	12	18	12	24	12	30	12	36	12	42	12	48	12	54	12	60	12	66
24	12	24	24	24	36	24	48	24	60	24	72	24	84	24	96	24	1.08	24	1.20	24	1.32
36	18	36	36	36	54	36	72	36	90	36	1.08	26	1.26	36	1.44	36	1.62	36	1.80	86	1.98

Table of Interest at the Rate of Interest at Six per cent. per Annum,

IN MONTHS.

$12.00		$13.00		$14.00		$15.00		$16.00		$17.00		$18.00		$19.00		$20.00		$25.00	
Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.
1	6	1	6½	1	7	1	7½	1	8	1	8½	1	9	1	9½	1	10	1	12½
2	12	2	13	2	14	2	15	2	16	2	17	2	18	2	19	2	20	2	25
3	18	3	19½	3	21	3	22½	3	24	3	25½	3	27	3	28½	3	30	3	37½
4	24	4	26	4	28	4	30	4	32	4	34	4	36	4	38	4	40	4	50
5	30	5	32½	5	35	5	37½	5	40	5	42½	5	45	5	47½	5	50	5	62½
6	36	6	39	6	42	6	45	6	48	6	51	6	54	6	57	6	60	6	75
7	42	7	45½	7	49	7	52½	7	56	7	59½	7	63	7	66½	7	70	7	87½
8	48	8	52	8	56	8	60	8	64	8	68	8	72	8	76	8	80	8	1.00
9	54	9	58½	9	63	9	67½	9	72	9	76½	9	81	9	85½	9	90	9	1.12½
10	60	10	65	10	70	10	75	10	80	10	85	10	90	10	95	10	1.00	10	1.25
11	66	11	71½	11	77	11	82½	11	88	11	93½	11	99	11	1.04½	11	1.10	11	1.37½
12	72	12	78	12	84	12	90	12	96	12	1.02	12	1.08	12	1.14	12	1.20	12	1.50
24	1.44	24	1.56	24	1.68	24	1.80	24	1.92	24	2.04	24	2.16	24	2.28	24	2.40	24	3.00
36	2.16	36	2.34	36	2.52	36	2.70	36	2.88	36	3.06	36	3.24	36	3.42	36	3.60	36	4.50

Table of Interest at the rate of Interest at Six per cent. per Annum,

IN MONTHS.

$50.00		$100.00		$200.00		$300.00		$400.00		$500.00		$600.00		$700.00		$800.00		$900.00		$1,000.00	
Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.	Mos.	Int.
1	25	1	50	1	1.00	1	1.50	1	2.00	1	2.50	1	3.00	1	3.50	1	4.00	1	4.50	1	5.00
2	50	2	1.00	2	2.00	2	3.00	2	4.00	2	5.00	2	6.00	2	7.00	2	8.00	2	9.00	2	10.00
3	75	3	1.50	3	3.00	3	4.50	3	6.00	3	7.50	3	9.00	3	10.50	3	12.00	3	13.50	3	15.00
4	1.00	4	2.00	4	4.00	4	6.00	4	8.00	4	10.00	4	12.00	4	14.00	4	16.00	4	18.00	4	20.00
5	1.25	5	2.50	5	5.00	5	7.50	5	10.00	5	12.50	5	15.00	5	17.50	5	20.00	5	22.50	5	25.00
6	1.50	6	3.00	6	6.00	6	9.00	6	12.00	6	15.00	6	18.00	6	21.00	6	24.00	6	27.00	6	30.00
7	1.75	7	3.50	7	7.00	7	10.50	7	14.00	7	17.50	7	21.00	7	24.50	7	28.00	7	31.50	7	35.00
8	2.00	8	4.00	8	8.00	8	12.00	8	16.00	8	20.00	8	24.00	8	28.00	8	32.00	8	36.00	8	40.00
9	2.25	9	4.50	9	9.00	9	13.50	9	18.00	9	22.50	9	27.00	9	31.50	9	36.00	9	40.50	9	45.00
10	2.50	10	5.00	10	10.00	10	15.00	10	20.00	10	25.00	10	30.00	10	35.00	10	40.00	10	45.00	10	50.00
11	2.75	11	5.50	11	11.00	11	16.50	11	22.00	11	27.50	11	33.00	11	38.50	11	44.00	11	49.50	11	55.00
12	3.00	12	6.00	12	12.00	12	18.00	12	24.00	12	30.00	12	36.00	12	42.00	12	48.00	12	54.00	12	60.00
24	6.00	24	12.00	24	24.00	24	36.00	24	48.00	24	60.00	24	72.00	24	84.00	24	96.00	24	108.00	24	120.00
36	9.00	36	18.00	36	36.00	36	54.00	36	72.00	36	90.00	36	108.00	36	126.00	36	144.00	36	162.00	36	180.00

CONCLUSION.

As heretofore, your Commissioner omits to discuss the various plans of Life and Fire Insurance. First, because it is not his business to undertake to elect which of all the plans of Insurance is the best for the insured and the public; second, because if he did, his views would embrace no more wisdom than other men have evinced.

And it is not regarded as profitable to the public for an official to undertake to set up personal dictation in regard to any one system of Insurance, be it Life, or Fire, or Marine, unless some one company is violating well known laws and well established rules, which relate to solvency and perpetuity. Dishonesty or insolvency are grounds for official interference.

Such Insurance Companies as are admitted into the State by this Department, are deemed to be safe and worthy of confidence. There have been cases, however, of companies which have not complied with the laws of this State, claiming that since the late revision of the statute laws they escape the former requirements and penalties of the law.

To obviate this claim, your Commissioner recommends the correction of the last compilation of statute laws relating to Insurance Companies and their agents, including a repeal of the law requiring a special deposit from such foreign companies as make a general deposit for the United States, with some particular State, of not less than $200,000.

The receipts of the Department for fees paid by Insurance Companies of other States and their agents, for the last fiscal year, and running into February, have amounted to sixteen hundred and fourteen dollars. For the services of an assistant, printing, stationery, rent, travel, postage, express and telegraph, the expenses have been nine hundred and sixty-five dollars.

It would not have been difficult to enlarge this report, and double the number of pages, by adopting the practice of dividing and sub-dividing the affairs of Insurance Companies; but as no advantage would follow such a complication of details, it is deemed best to continue the simplest form of exhibit, and present the affairs of the companies in condensed balance sheets.

The only exception to uniform courtesy from all the institutions admitted into the State, is the instance of the President of a Fire Insurance Company; but as it was understood to be chronic in the case of this gentleman, it was overlooked.

The variety of forms and blanks necessary to conduct the Department are very great, because the laws and the requirements of no two States are alike; and as other States furnish full sets of blanks, free of charge, it is expected of your Commissioner to do the same, which he does at his own expense.

The Department will exercise special care to exclude from the State all such Insurance Companies as are deemed unsound or not trustworty for other reasons; and in case of changes, will take such action as may be deemed expedient for the protection of the public.

BENJAMIN NOYES,
Commissioner of Insurance.

New Haven, Connecticut,
May Session, A. D. 1868.

REPORT

OF THE

SPECIAL COMMISSIONERS

ON THE

SUBJECT OF TAXATION,

WITH

BILL IN FORM ACCOMPANYING.

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REPORT.

To the Honorable General Assembly of the State of Connecticut, May Session, A. D. 1865 :

The undersigned commissioners, appointed at the last session of the General Assembly, under a resolution approved June 18, 1867; and also under another resolution approved July 17, 1867, to take into consideration the subject of taxation, with power to send for persons and papers, and report the result of their investigations to the next General Assembly of this state, have carefully attended to the duties assigned them, and respectively beg leave to submit, as the embodiment of their conclusions upon the subject, the accompanying bill in form for a public act.

It will be seen that the bill proposes a very material change of the whole system, if system it can be called, of our present tax code, and so far as relates to the assessment of taxes for state purposes, substitutes an entire new code, in place of the existing one.

The commissioners have been fully impressed with the importance of the task assigned them, and with the difficulties to be encountered in any attempt to devise a scheme of taxation, which should be efficient and thorough in its reach, and at the same time uniformly just and equitable in its practical application and effect, upon all classes and interests, in all its details.

This problem has engaged the attention of the most profound and sagacious legislators and statesmen in all ages, and under all forms of governments, and has hitherto received, as it must probably ever continue to receive, only an approximate and partial solution.

There are, indeed, some general principles involved in this inquiry, in which most intelligent minds would agree; but the difficulty arises in making a practical and equitable application of these principles to all the multiform and diversified interests and conditions of individuals and communities.

A rule of taxation, equal and just, as applied to one class of interests or property, may be found unjust and utterly inapplicable to another and different class, and give just occasion for complaints of unequal burdens.

Our general plan of taxation has become a subject of quite universal and serious complaints from the inequality with which it levies its tribute, and the commissioners are fully persuaded that much of this complaint is well founded, and of a character imperatively demanding some remedy, if such remedy can be devised, for the evils complained of.

So long as the state itself, as well as the municipal communities therein, were substantially free from debt, the burden of taxation was correspondingly light, and of little importance, and these inequalities in the rules or rates of taxation were quietly submitted to, as a matter of trivial importance; but under the present enormous accumulation of the public burdens, and the amount of tax contributions demanded for their support, the inequalities in the distribution of these contributions becomes not only unjust, but oppressive. And however unwisely or indiscreetly many of these public obligations may have been assumed or incurred, they are now upon us, and must be met and provided for, with that integrity and promptness which becomes our character as a people.

Nor is there believed to be cause for any just apprehension that these obligations, however great they may appear to us, are beyond our ability and resources to maintain and to meet at their maturity, if the burden is fairly and equitably proportioned among us, according to our individual means and ability.

If their great weight is left to fall chiefly upon some interests, to the exclusion of others equally able, it may, and should be, anticipated, that constant efforts will be made to throw off such unequal and crushing weight; but if it can be reasonably and fairly adjusted to the condition and means of every interest, it will be cheerfully and triumphantly borne by the tax paying community.

The commissioners, in the course of their investigations, have carefully examined the legislation of other states upon the subject of taxation, as well as our own; and have made a personal visit to each of the four neighboring states of Massachusetts, Rhode Island, New York and New Jersey, to confer with the tax officers of those states, and to acquaint themselves, as far as a limited time for such inquiry would permit, with the scope and spirit of their laws upon the subject, and with their practical operation and results. They found in each of these states, as in their own, that this subject was engrossing the most earnest attention of legislators, tax officers and tax payers, and everywhere demanding an equitable adjustment of the public burdens. Many of the suggestions thus gathered, more especially from the tax code and tax department of Massachusetts, have been of essential service, and have been incorporated in the provisions of the bill now presented.

One of the obvious and peculiar defects of our system is, that it has no central or supervisory head, by which to secure any sort of uniformity in the manner or efficiency of its administration. It rests solely upon the interested action and determinations of more than one hundred and sixty separate local boards of officers, all acting without concert, conference, or any common control or supervision, and all alike interested, as well as their constituents, by the strongest pecuniary inducements, in the undervaluation and concealment of the taxable resources of their respective towns, in order to evade and reduce their respective state tax apportionments. So general and significant has this practice of undervaluation become, and so palpable were the inequalities resulting from it, that the General Assembly, at the two last sessions, appointed boards of valuation, or equalization, with a view to check, in some measure, this growing evil. But when it is considered that the same pernicious influence of self-interest which had produced under-valuations by the local town officers, was still left in full operation upon the action of every member of these boards, in the valuations in their respective local districts, it is not strange that this intended check should have proved to be of very little practical avail.

It may safely be assumed that, so long as individuals and communities are left to adjust for themselves, and practically at their own discretion, the proportion of the public burden which they themselves shall bear, just so long will palpable and glaring inequalities prevail; and the only effectual remedy is to secure, if possible, a fair and uniform valuation of all taxable property by some mode of appraisal, divested of the influence of self-interest, personal or local. There certainly can be no reason shown why a very close approximation to the true actual value of every class of property in the state, may not be obtained, if proper measures are adopted to secure it. It would indeed be absurd to suppose otherwise. We think it equally clear that it is the indispensable duty of the state, as the first requisite for a basis of equal taxation, to secure such true and actual valuation of all taxable property. Without such a basis no equitable or consistent superstructure can be framed or devised. But while it is true that the more visible kinds of property are notoriously undervalued, it is also equally true that another class, the nature and character of which affords peculiar facilities for concealment, escapes to a very considerable extent, the reach of the tax gatherer entirely. Locked up from public observation, in the private coffers of its owner, the assessors can have no knowledge of its existence, in many cases, except from the disclosure of the owner himself.

Were these concealments on the part of the one class fairly equivalent to the undervaluations of the other, there might be no fair ground of complaint, as between these two classes; but as between individuals of either class, the party fully and honestly disclosing, and the party wrongfully concealing his taxable property, stand upon very unequal ground. And were these inequalities, both between these two classes and the individuals composing each, fairly balanced, there is yet another large class, consisting of corporate stocks, and similar property, which, by the provisions of law, must be returned by the officers of these incorporations at the full price of its market quotations, and consequently taxed upon the full measure of its actual value. Some new rule is therefore obviously demanded, which shall aim to secure—1st, a full disclosure of all taxable interests; 2d, a common and impartial measure of valuation, and 3d, a uniform rate of taxation upon such valuation.

The practice of allowing "offsets," as they are commonly termed, or of deducting from the value of property the indebtedness of the owner, although a practice of long standing and sanctioned, in certain cases, by our laws, is, nevertheless, not only pernicious in its operation, but unsound and unjust in principle.

The variable and often contradictory legislation upon this subject from time to time, is in itself an indication that the theory is erroneous. A given amount of property, held by any owner, requires and receives the same degree of protection from the state, whether such owner is indebted for it or otherwise. His indebtedness in no way diminishes either the public obligation or the public expense of such protection; and it is difficult to see why his tribute for that protection should not be equally, as in all other cases, commensurate with the value protected for his benefit. It is even more difficult to see why the creditor of such owner should not pay full tribute on the value of his securities upon such property, whether in the form of notes, bonds, mortgages, or in any other form. They constitute a separate and distinct property, having in and of themselves an independent value, and that of the most available and productive kind; demanding the full protection of the law, and more than most others, swelling our dockets—occupying the attention of our courts, and appealing to all their expensive agencies.

This question has been so ably discussed by the tax commissioners of the state of New Jersey—a commission raised like our own, and for the same purpose—that we beg leave to quote the following brief extract from their report upon the subject of taxation, made the present year to their legislature. That commission consisted of five of the most able and eminent jurists of that state, one of whom was the State Chancellor, and upon the subject of deductions for indebtedness they declare these opinions:

"But the principle on which the revised bill is in this respect framed, does not derive its support merely from the obvious and acknowledged difficulties of carrying into practice the principle on which the existing tax laws are formed. The principle of the bill has been adopted because believed to be in itself a sound and equitable one. Taxes on property are defined to be the tribute which that property owes to the state, for the protection, security, and consequent value it receives from the government of the state. The protection so received is *commensurate with the property held*, and not with the sum, or balance, the holder may be found to be worth. If the owner of land be indebted to his creditor for the value of the land, and this indebtedness be represented by note or bond, the land is one property, and the note or bond another. Each is protected by the law, and each owes its tribute to the law. They are in no sense the same—different in their natures, their titles, and the uses to which they may be put. Each may be sold and transferred by the holder, without regard to the other; nor does the note necessarily represent, or depend for its value on the land. It may be paid by other means and other property; by the industry, the labor, or the future services of the maker. For all other purposes the note and the land are regarded by the law, and are treated, in fact, as distinct and valuable things. Why should they not be treated as such in the laying of taxes? The credit is given, and the note, or bond, or mortgage is made, because the convenience and advantage both of buyer and seller are thereby subserved. The buyer prefers the one property, and the seller the other. *Taxing each property once, is not double taxation.*"

We hold these views to be sound, and that all property under the full shelter of the law, should pay tribute for that shelter, according to its protected value, without regard to any questions of indebtedness or securities, incidentally growing out of it. These questions of indebtedness, erroneous in principle, and offering motives for the creation of fictitious debts for offset, have ever been, and must ever continue to be, a prolific source of dispute and vexation in their adjustment, and continually calling for legislative changes.

The equity and propriety of taxing residents of this state, on personal property held by them, but located or invested beyond the limits and jurisdiction of the state; and, on the other hand, of taxing such estate of non-residents, when their property is invested or located here, is a question which has challenged the serious attention of the commissioners.

It assumes a higher importance from the fact, that it involves questions of inter-state comity and fair dealing. It would seem obvious that no state should exact tribute from both classes, as is now often the case, but that some common policy should prevail between neighboring states, more equitably defining the mutual limits of this exaction.

Assuming that we should exact a tribute from one class only, and seeking alone for the greatest amount of revenue therefrom, our business relations with other states are such that our own pecuniary policy would dictate the taxation of personal property owned within, but located without the state, rather than the converse of this rule; but there are other and higher considerations and principles which, in the judgment of the commissioners, should control this question.

It is deemed to be a sound principle of inter-state equity and justice, that the government, whose ægis alone affords the protection, should alone exact the tribute; and that the mutual rules should therefore be for each state to tax all the property located within its jurisdiction, and under the shelter of its laws, whether owned by a resident or non-resident, and to impose no tax upon property beyond its limits and protection; and this principle has governed the commissioners in the preparation of the bill now submitted.

The wide field of indirect taxation, prolific as it is in resources of revenue, and yielding those resources in a form less perceptibly burdensome to the contributors, has already, by the current of events, been preoccupied by the national government; and the commissioners have not deemed it wise or politic to attempt to gather from this field any additional gleanings. They fully concur in the following views, presented by the comptroller of the state of New York, in his report of January last, to the legislature of that state:

"That the latter [indirect taxation] is attended with great advantages cannot be denied; but the field is already occupied by the national government, whose necessities will require, for a long and indefinite period of time, large contributions from the annual results of the capital and industry of the country. From the mere force of circumstances there has resulted a virtual partition of the sources of revenue, under which the states are likely to be left in unmolested possession of the field of direct taxation, and, if properly improved, it will be found ample for all their wants, without the necessity of imposing heavier burdens than the people can conveniently bear. To enter on a domain already in possession of another power, with equal original jurisdiction over it, and to whose constitution and laws our own are subordinate, might result in a conflict of authority which would be disastrous alike to the interests of both."

The foregoing considerations foreshadow some of the more general principles and features of the bill now presented; but the brief synopsis which follows will more concisely indicate some of the leading provisions in detail.

It prescribes a uniform rule of valuation and rate of taxation upon all classes of property alike, with a certain few exceptions; and by providing for an impartial and disinterested appraisal, once in five years, as a fixed basis for the quota of the state tax, due from towns during that fixed period, removes every motive to undervaluation by the local town assessors, or tax payers, so far as the state tax is concerned, which is the chief, if not the only inducement to such undervaluation. A similar mode of appraisal has long been in practice in Massachusetts and Rhode Island, occurring only at intervals of ten years each, and is strongly commended by the tax officers of those states. From their ample experience they are strongly persuaded that a period of ten years is preferable to a shorter one, not only as less expensive, but less frequently a disturbing element, and on the whole more satisfactory to the people; but being of the character of an experiment in this state, the commissioners adopted the shorter period, as perhaps more acceptable upon its first trial.

It creates a central tax department, and provides for the appointment of a tax commissioner, charged with the especial duty of regulating under the law, and of collecting all taxes due from corporations, and having also an advisory supervision over the entire administration of the tax laws; thus securing uniformity and harmony of action among the various local tax officers, and throughout the whole tax department.

It establishes a uniform rule by which the tax commissioner is to determine the taxable value of the franchise and property of all corporations, and also a rule by which he is to determine the rate of such taxation at the average rate which is paid upon other classes of property; and it clothes him with ample authority to enforce prompt compliance with the law by summary legal process.

It provides a board of appeal, wherein all questions of grievance may be speedily heard and determined.

It provides for an annual exhibit to the General Assembly of the whole practical operation of the tax code; and once in five years a full and clear exhibit of all the taxable resources of the state, properly arranged and classified—a subject, in the judgment of the commissioners, of the very highest importance.

In regard to railroad and horse railroad companies, express, telegraph, and certain insurance companies, for which special provisions for taxation have been recently made, it has appeared to the commissioners that the existing provision may safely and fairly be left as they are, and they have therefore made no essential alterations, but have classed them by themselves, and excluded them from the operation of the general rules for taxation applicable to other corporations.

Savings banks, and similar institutions for savings, and the shareholders of national banks, are included under the general rule by which other corporations are taxed; but in the case of savings banks an exemption is made in favor of all sums under two hundred and fifty dollars standing to the credit of any one depositor, as a consideration due to the character and condition of many of these humble depositors.

The section relating to the shareholders of national banks has been framed to conform to the general rule, and also in conformity with the recent act of Congress, approved Feb. 10, 1868, by which a more definite construction is given to the former act, and further powers of taxation are conferred upon the state legislatures.

Provision is also made for reaching more effectually, for the purposes of taxation, the taxable bonds of this state, by whomsoever held. A small portion of these bonds were specially exempted from taxation, by the terms of their issue and sale, and must therefore remain exempt; but the commissioners can see no good reason why the bonds issued and sold, subject to taxation, should not be reached and made to contribute equally in the hands of every holder, a uniform tribute to the state which created them, and sold them subject to such taxation.

Another provision is, that a portion of the taxes collected by the tax commissioner from corporations, is to be credited to the respective towns, in proportion to the amount of stock held by residents of such towns. This is deemed to be more equitable than the present practice of imposing a certain specified tax, payable exclusively to the state treasury, and debarring the local communities from any right of taxation, or any participation in the avails of such tax, for local purposes. It is held to be a sound and equitable principle that whatever property is taxable for state purposes, should, as a general rule, be also taxable for all local purposes, where it may be situated; and this provision is designed to conform to the equity of that principle.

There are sundry other new provisions, of minor importance, the character and objects of which will be found sufficiently obvious without further explanation here. In the manner of local assessments by town authorities, the present forms and modes of proceeding are substantially retained; the principal changes relate to the manner of choosing town assessors and boards of relief, and their terms of office, and such other revision of the present laws as was found necessary to adapt them to the new bill. In the provisions for the collection of taxes by town authorities no material changes are made.

Should the general principles and features of the bill submitted meet the favorable consideration of the honorable General Assembly, great caution should be observered in incorporating into it such amendments or modifications as may be suggested, lest the congruity and integrity of the whole bill should be thereby seriously affected, as many of the sections depend, for their full force and effect, upon their relation and reference to other sections and portions of the act.

In conclusion, the commissioners beg to be indulged in expressing the further opinion, that whatever system or scheme of taxation may be devised, in order that it should become satisfactory, it should be fortified by some practical assurance, that the public burden is not to be hereafter increased by lavish expenditures for questionable purposes. They utterly repudiate the idea, prominently advanced in some quarters, in whatever form it may be presented, or in whatever guise it may appear, that "a public debt is a public blessing." They hold it to be an evil, and evil only—resting, with the stifling effect of an incubus, upon the prosperity and welfare of the people; and that, as such, it should be jealously guarded against whenever possible, and diminished as rapidly as reasonable ability will allow.

Let the community feel that while struggling under an oppressive weight of taxation, the public debt is still increasing its annual weight upon their shoulders, with no definite prospect or hope of future relief, and no system of taxation will be satisfactory, or even tolerable; but, on the other hand, with the consciousness that each annual tribute steadily diminishes that burden and opens a sure prospect of ultimate relief, that tribute will be readily yielded.

A legislator imbued with the doctrine that a public debt is a public blessing, is already prepared in advance to yield to every specious solicitation for extra appropriations, whenever beset by interested parties, on *ex parte* representations, and especially when influenced by the too common reflection that our present enormous debt of seven or eight millions, will not be sensibly affected by the addition of a few thousands more, whereas the very magnitude of the debt should be a controlling reason against any augmentation.

The commissioners are fully persuaded, that the tax paying community should feel a full assurance that the future policy of the state is to be shaped and administered with a fixed view to a steady reduction of the public debt, unless prevented by the overwhelming force of circumstances unforeseen and beyond control.

Respectfully submitted,

W. H. MORGAN, Hartford,
CHAS. SHELTON, New Haven,
J. W. OLNEY, Thompson,
LEMAN W. CUTLER, Watertown,
Commissioners.

New Haven, May 13th, 1868.

An Act for the Assessment and Collection of Taxes.

Be it enacted by the Senate and House of Representatives, in General Assembly convened:

CHAPTER I.

SECTION 1. All property, whether real or personal estate, subject to taxation, shall, unless otherwise specially provided, be assessed at its true market value, on the 1st day of October next preceding such valuation, and the rate of taxation upon all such property, when not otherwise specially provided, shall be uniform.

SEC. 2. The value of all property for the purposes of taxation shall be appraised by the assessors appointed to appraise the same, at its true actual cash value in open market, and not at any forced or auction sale; and as said assessors would appraise it, under oath, in payment of a just debt due from a solvent debtor.

CERTAIN TERMS DEFINED.

SEC. 3. The terms "real estate" and "land," as used in this act, shall include all buildings thereon and all fixtures appurtenant thereto, and when applied to corporations shall include all buildings and machinery in use in, or appurtenant to, such buildings.

SEC. 4. The terms "personal estate" and "personal property," as used in this act, shall include all goods, chattels, moneys, book debts, certificates of debt, notes, bonds, stocks of corporations or communities, or public stocks, and all other property not included in the terms "real estate" or "land."

Sec. 5. The term "corporations," as used in this act, shall include all incorporations chartered by this state, or organized under the laws thereof, for banking, insurance, manufacturing, mechanical, mining, quarrying, fishing, transportation, or for any other purposes of business or profit, whether such business is conducted wholly or in part within this state, or elsewhere.

EXEMPTIONS.

Sec. 6. The following property shall be exempt from taxation, viz:

All property exempted by the laws of this state or of the United States;

All real estate belonging to the United States or this state, or to any county, town, city or borough;

All such portions of real estate or buildings as are used exclusively as colleges, academies, public school houses, churches, or public infirmaries; or owned by any society and used by them exclusively for scientific, literary or religious purposes;

All property, real or personal, granted or given to the Hartford hospital, and invested and held by such institution for its use; and the income arising therefrom;

All burying grounds;

The real and personal estate of persons of color;

All household furniture not exceeding five hundred dollars in value, in use by any person or family; and all wearing apparel in such use;

All farming tools in actual use in the business of farming;

So much of the product of any farm or garden as may be necessary for the use of any one family;

All swine to the amount of fifty dollars, and all poultry to the amount of twenty-five dollars;

All public or private libraries;

All musical instruments exclusively used in churches, or in connection with public worship; and all other musical instruments in private use, not exceeding in value fifty dollars each;

All buildings, engines and other apparatus used exclusively for the extinguishment of fires;

The tools of a mechanic, used by himself in his trade, to the amount of one hundred dollars, and the fishing apparatus used and owned by any one person or company, to the same amount;

And cash on hand to the amount of fifty dollars.

TAX COMMISSIONER APPOINTED.

Sec. 7. His excellency the governor shall, with the concurrence of the senate, appoint a tax commissioner, who shall hold his office for a term of five years, and until his successor shall be duly appointed and qualified—subject at all times to removal by the governor or senate for cause shown—who shall have the special charge of the assessment and collection of all taxes upon corporations, and the general supervision of the assessment and collection of all other taxes, in the manner hereinafter provided. In case of a vacancy by death, resignation, removal or otherwise, in the office of said tax commissioner, the same may be filled by the governor until the third week of the next regular session of the senate.

SALARY AND BOND.

Sec. 8. The salary of the tax commissioner shall be at the rate of   per annum, payable in the manner provided for other state officers; and he shall devote his time exclusively to the performance of the duties of his office. He shall give bond to the state, with sufficient surety, to the acceptance of the governor, in the sum of ten thousand dollars, payable to the state treasurer, as indemnity against any loss occasioned by fraud, defalcation or fault in his office. He may employ such clerks or assistants as he shall find absolutely necessary to aid him in the proper discharge of the duties of his office, and may fix the compensation of such clerks, subject to the approval of the general assembly.

OATH.

Sec. 9. Said tax commissioner shall be sworn to a faithful performance of his duties, and shall have authority to administer oaths; and the oath to be taken by said commissioner, and the state assessors by him appointed, as herein provided, shall be the same, *mutatis mutandis*, as is provided for town assessors.

FIVE YEARS VALUATIONS.

SEC. 10. The tax commissioner shall, in the year 1868, and every fifth year thereafter, between the first day of October and the first day of January in each of said years, cause to be appraised the value of all the taxable property of each town in the state, except property of corporations other than real estate; and for that purpose may appoint such state assessors as he may deem necessary, not exceeding two for each county; but no state assessor shall act as appraiser in the county where he resides.

INSTRUCTIONS FOR STATE ASSESSORS.

SEC. 11. The tax commissioner shall prepare such blanks and issue such instructions to the state assessors as shall be necessary to require and enable them to make to said commissioner uniform returns of each town, in tabular form, and properly classified, a clear and full description of each kind of property appraised, the several quantities or number of each kind, the average value thereof, and the aggregate value of each kind; and also the aggregate value of all such taxable property in each town.

POWERS OF STATE ASSESSORS.

SEC. 12. The state assessors, in the discharge of their duties, shall have free access to the assessment lists of the several towns and cities, and to all public records or papers needful as evidence of sale or value of any property to be by them appraised; and it shall be the duty of all public officers to give to the state assessors, when required, as full information as they can of all facts necessary to aid them in the discharge of their duties; and said assessors shall have power to administer oaths, and to examine any person under oath, relative to the ownership or value of any property to be by them appraised, and all matters pertaining thereto.

TOWN VALUATIONS EQUALIZED.

SEC. 13. The tax commissioner shall revise, equalize and adjust the aggregate town valuations returned by the several state assessors, and shall apportion the same to the several towns, in due and fair proportion, according to his best ability, on or before the first day of February next after such valuations are made; and shall prepare and transmit by mail or otherwise, during the first week in said February, a printed schedule of such apportionment, addressed to the first selectman of each of the several towns.

BOARD OF APPEALS.

SEC. 14. Said commissioner, with the state treasurer and comptroller, shall constitute a "board of appeals," to hear and determine all appeals arising under this act. The appeals from the town valuations shall be presented in writing, signed by a majority of the selectmen of the town aggrieved, in the month of February next after such valuations, and not after nor in any other manner; and the determinations of said board shall be final. Each member of the board of appeals, before entering upon the duties of said office, shall take the oath provided for members of the boards of relief of the several towns.

BASIS OF TOWN TAXATION BY STATE.

SEC. 15. Said commissioner shall report to the general assembly next holden after any such state appraisal, the aggregate values apportioned to each town respectively, as found and determined as aforesaid, and such valuations, when approved and established by said general assembly, shall constitute the fixed amount or total sum upon which the state taxes are to be laid for the next five years, and until a new valuation is made; and the said commissioner shall thereupon give notice to the treasurers of the several towns of the amount of the fixed sum so apportioned to each town.

ANNUAL AND SPECIAL REPORT TO GENERAL ASSEMBLY.

SEC. 16. The said commissioner shall report annually to the general assembly, giving a full, clear and concise statement of the practical operations and results of the tax laws of the state, and of the general matters under his supervision;

shall from time to time suggest to the general assembly such additional legislation upon the subject of taxation as he shall deem expedient; and at each session of the general assembly next holden after a state appraisal, he shall prepare and report a full abstract, showing as clearly and concisely as may be all the various sources, properly classified, from which taxes are derived, the kind and aggregate quantity of each class, the taxable value thereof, and such other general information as he may deem conducive to a full exhibition of all the taxable resources of the state.

CORPORATIONS—SPECIAL CLASS.

TAX ON NOMINAL CAPITAL.

Sec. 17. Every corporation chartered by this state, or organized under its laws, for the purpose of mining, quarrying, dealing in lands, or other purposes, without this state; and every such corporation or association incorporated elsewhere, and having an office, place of business or agency within this state for the direction of its affairs, or the transfer of its shares, shall, between the first and tenth days of January, annually, make return, under the oath of its president or treasurer, to the tax commissioner, of the whole amount of its capital stock, as fixed by the provisions of its charter, on the said first day of January, and shall pay to the tax commissioner a tax of one-twentieth of one per cent. upon the amount of said capital stock, at the par value thereof.

TAX ON PROFITS.

Sec. 18. Every corporation embraced in the next preceding section shall also annually, on or before the first day of February, return to the tax commissioner a statement of the business of such corporation for the year ending January first next preceding, signed and sworn to by its president or treasurer, containing a full and accurate account of all the property held by such corporation, and of all receipts and expenditures during said year on account of its business and of all products thereof. Said statement shall contain such details, and in such form, as shall be prescribed by the tax commissioner, who shall furnish blank forms therefor; and said commissioner, from the returns so made, or otherwise, shall ascertain and determine the net profits or gains of each of such corporations from its property and business during the year aforesaid, and shall assess a tax of four per cent. upon the amount thereof.

OFFICERS, ETC., LIABLE FOR TAX.

Sec. 19. All officers of the corporations embraced in section seventeen, and all other persons assuming to represent such corporations within this state, by having charge of its affairs or books for transfer of its shares, shall severally be personally liable for the amount of the tax imposed upon such corporation under this act, if the same shall not be paid by such corporation.

NO REDUCTION OF CAPITAL.

Sec. 20. The capital stock of any corporation embraced in the seventeenth section, existing by authority of this state, shall not be reduced except upon application to the general assembly; and in case of such application written notice shall be given to the tax commissioner at least ten days before such application is made.

TAX, WHEN PAYABLE—APPEAL.

Sec. 21. The tax commissioner shall, as soon as may be after the returns are made under section seventeen, and also as soon as may be after he shall have ascertained and determined the amount of the tax payable by each corporation under section eighteen, give notice, by mail or otherwise, to each of such corporations, of the amount of taxes due from such corporation, and the time when such tax shall become payable; and such corporation shall pay the same to the said tax commissioner within ten days after the same shall have so become due and payable; *provided*, however, that every such corporation shall have the right to appeal from the doings of the tax commissioner to the board of appeals, within ten days after the time such tax shall have become due and payable as aforesaid, by giving written notice of such appeal to said tax commissioner; but no appeal shall operate as a stay of payment or collection of portion of such tax.

ACTION OF BOARD OF APPEALS.

SEC. 22. If, upon hearing, the board of appeals shall reduce the amount of such tax, the amount of such reduction shall be immediately refunded to such corporation by the state treasurer, on the certificate of such reduction by said board; and if said board of appeals shall add to the amount of such tax, such corporation shall immediately pay the amount of such addition to the tax commissioner; and the determination of the board of appeals shall be final; *provided*, that the payment of taxes under this and the next preceding section shall not be held to exempt any shareholder in such corporations from liability to taxation on such shares for any school society, school district or parish purposes.

CORPORATIONS—GENERAL CLASS.

TAXABLE VALUE OF FRANCHISE.

SEC. 23. The taxable value of the franchise and property of all corporations, and the rate of taxation thereon, except those included under section seventeen, and except where other special provisions are made, shall be determined in the manner following:

Every such corporation shall annually, between the first and tenth days of October, return to the tax commissioner, under the oath of its cashier, treasurer, or a majority of its directors or managers, a complete list of its shareholders, resident or non-resident, with their places of residence, the number of shares held by each on the first day of said October, the amount of its capital stock, its place of business, the par value and the market value of its shares on said first day of October. Such returns shall state, in cases of stock held as collateral security, not only the name of such holder, but also the name of the pledger and his residence. They shall also contain a statement and description of the real estate owned and held by such corporation, and the location and value thereof; and also the separate proportional value of such portion of their real estate, if any there be, as is located without this state; and such returns shall be made in manner and form acceptable to said tax commissioner, or in such form as he shall prescribe; and said commissioner shall prepare and furnish for the use of such corporations, blank forms for such returns.

TAXABLE VALUE FOUND.

SEC. 24. The tax commissioner shall ascertain and determine from the returns so made, or otherwise, the true market value of the aggregate shares of such corporation, and also the aggregate value of its real estate, and shall deduct the value of its real estate from the value of its aggregate shares; and the remaining value, so found, shall be taken as the true value of its corporate franchise for the purposes of taxation under this act.

TAXABLE RATE FOUND.

SEC. 25. Said tax commissioner shall also ascertain from the returns made by the several town clerks, as provided in the next succeeding section, or otherwise, the average rate of taxation throughout this state for all the purposes named in said section, and the average rate, so found, shall be the fixed rate of taxation which such corporations shall pay for the then current year, on the value of their corporate franchise and property, not including real estate; *provided*, that the payment of the tax herein prescribed shall not be held to exempt any shareholder in such corporation, residing in this state, from liability to taxation on such shares for any school society, school district, or parish purposes.

AVERAGE RATE OF TOWN TAXATION—RETURNS OF.

SEC. 26. The town clerk of each town, and the city clerk of each city, shall annually, between the first and tenth days of October, return to the tax commissioner the rate of taxation voted during the year next preceding, by their respective towns or cities, for all state, county, town, city or school purposes, and the rate for each purpose; but not including taxes paid by school societies, school districts, or parishes, for their own local purposes. Said town clerks shall also, annually, at the same time, return to the tax commissioner the name of every corporation established in their respective towns, the business of the corporation, and the name and residence of its president and secretary.

TAX—WHEN PAYABLE.

Sec. 27. The tax commissioner shall, as soon as may be after his determinations are made as aforesaid, give notice, by mail or otherwise, to each of said corporations, of the amount of tax respectively so found due, and the time when the same shall be payable; and such corporation shall pay the same to said commissioner within ten days after the same shall have so become due and payable; subject to the same right of appeal, and proceedings thereon, as are provided in sections twenty-one and twenty-two of this act.

EXAMINATION OF CORPORATION BOOKS—SPECIAL RETURNS.

Sec. 28. Every corporation taxable under this act shall, whenever required, submit its books to the inspection of the tax commissioner, and the treasurer and directors or managers of such corporation shall also, when required, submit to a personal examination, under oath, by said tax commissioner, in regard to all matters affecting the determinations which are to be made by him. Every such corporation shall also make such special returns relative to its business or property as may from time to time be required by said tax commissioner in the proper discharge of the duties of his office.

NOTICE OF ORGANIZATION.

Sec. 29. Every corporation now organized by special charter, or under the general laws of the state, shall, immediately after the passage of this act, and without further notice, make return to the tax commissioner, under the oath of its president or secretary, of the name and location of the corporation, the date when organized, the number of its shares, the amount of its capital, the name of its president and secretary, and a certified copy of its charter or articles of association; but it shall be the duty of the tax commissioner to give notice, as soon as may be, to all such corporations, of the provisions of this section. And every corporation hereafter organized, as aforesaid, shall make a like return to said commissioner within thirty days next after the date of its organization, and shall be subject to all the provisions of this act, to the same extent and in the same manner as are corporations now existing.

REAL ESTATE—RETURN BY CORPORATION.

SEC. 30. Every corporation except those included under section seventeen shall also, between the first and tenth days of October, annually, make returns to the assessors of the several towns wherein any portion of its real estate is situated, of a full description of all its real estate as defined in section three, and of the location and value thereof, and of the value in each town; which description, location and valuation shall correspond with the description, location and valuation returned by said corporation to the tax commissioner under section twenty-three.

LESSEE LIABLE FOR TAX.

SEC. 31. The lessee of the works, structures, real estate or machinery of any corporation, shall, as well as the lessor, be liable to pay all taxes upon such corporation under this act; and upon such payment may, in the absence of any agreement to the contrary, retain the same out of the rent of such property, or recover the same in an action against the lessor.

TAX COMMISSIONER TO PAY INTO TREASURY.

SEC. 32. All moneys received by the tax commissioner, from taxes, penalties, interest, costs, or from any other source arising under this act, shall be immediately paid into the state treasury, and credited to the tax commissioner's department; and all necessary expenses of said department shall be paid by the state treasurer on the order of the comptroller, first having been certified to by said tax commissioner.

NATIONAL BANKS.

SEC. 33. The tax commissioner shall obtain from the president or cashier of every bank or banking association organized under the laws of the United States, and located and doing business in this state, annually, between the 1st and 10th days of October, a statement of the same facts in relation to such bank as are required to be returned by other corporations under section 23 of this act; and the taxable value of the shares of such bank, the rate of taxation thereon, the amount of the tax which shall be payable on all such shares by said bank to the tax commissioner; and the time and manner of such payment shall be determined by said tax commissioner in the same manner, and all the proceedings relating to the assessment, collection and apportionment to the respective towns of such tax, shall be subject to the same provisions as are herein made for the corporations embraced under said 23d section; provided, that the payment of such tax by said banks shall not be held to exempt any shareholder therein from liability to taxation on such shares for any school society, school district, or parish purposes.

SAVINGS BANKS.

Sec. 34. The directors, trustee, or other managers of any savings bank, society for savings, building association or other like corporation organized for the purpose of receiving small deposits bearing interest for accumulation, shall return, on or before the 20th day of July, annually, to the tax commissioner, the name and residence, so far as is to them known, of every depositor, resident or non-resident, who, on the 1st day of said July, shall have on deposit with such bank or corporation an amount exceeding two hundred and fifty dollars, together with the whole amount, in every such case, exceeding two hundred dollars; which amount exceeding two hundred dollars, if the whole sum on deposit shall exceed two hundred and fifty dollars, shall be subject to the same rule of taxation as is herein provided for other corporations embraced under section 23d of this act; except that no deduction shall be made from the taxable value of such deposits on account of any real estate owned or held by such corporation; provided, that the payment of such tax by said corporation shall not exempt any depositor from liability to taxation on the above excess of his deposits, for any school society, shool district, or parish purposes.

RAILROADS—RETURNS.

Sec. 35. The secretaries or treasurers of the several railroad companies and horse railroad companies, which have been, or may hereafter be, incorporated in this state, shall, within the first ten days of October, annually, make out under oath and deliver to the tax commissioner, full and true lists or statements of the number of shares of stock in their respective companies, the amount of their funded and floating debt, the amount of cash on hand, the true market value of each share of stock, and of their funded and floating indebtedness, on the 1st day of said October, the whole length of their respective roads, and the length of those portions thereof, if any there are, lying without this state.

RATE AND PAYMENT OF TAX.

Sec. 36. Each of said railroad companies shall, on or before the 20th day of October in each year, pay, or cause to be paid, to the tax commissioner, for the use of the state, a sum equal to one per cent. of the market value of the stock, and of the funded and floating debt of such company, whether the stock and debt of such railroad, or horse railroad company, is owned by persons residing in this state or elsewhere; first deducting from such valuation the amount of cash actually on hand, which valuation so made and approved by the tax commissioner, or amended by the board of appeals, shall be the fixed basis or measure of value of the rights, franchises and property of such railroad and horse railroad for the purposes of taxation; and this sum or tax shall take the place and be in lieu of all other taxes on railroad and horse railroad property, franchises, funded and floating debts within this state, except such real estate as is owned by such corporations and not necessary or in use in the proper operation of such road; but such real estate so excepted, shall be liable to taxation by the respective towns wherein the same is situated. But when a railroad lies partly within and partly without this state, there shall be paid only such proportion of the tax herein imposed as the length of the road lying within this state bears to the whole length of the road; and when any tax hereby imposed becomes due, and the company from whom due shall not then have possession or control of its road, each and every person, corporation, trustee, assignee, agent or lessee then having such possession or control, shall be liable to pay and shall pay said tax to said commissioner, within the time herein prescribed for such payment.

MUTUAL INSURANCE COMPANIES.

SEC. 37. The secretaries or treasurers of the several insurance companies chartered by this state, doing busines in whole or in part upon the plan of mutual insurance, including all companies whose policy holders have a right to participation in the profits, shall, on or before the 10th day, of October annually, render to the tax commissioner a statement, under oath, showing the total amount of assets belonging to said companies, respectively, upon the 1st day of said October, derived from the business done upon the plan of mutual or participating insurance; and showing also the amount of premium notes held by said company, and its losses ascertained and unpaid on said day, with the balance remaining, after deducting the amount of such premium notes and ascertained losses from said total amount of assets, derived as aforesaid; and each of said companies shall pay to the tax commissioner, for the use of the state, a sum equal to three-fourths of one per cent. upon the balance remaining as aforesaid, and the same shall be in lieu of all other taxes upon the assets of such company, derived from its business done upon the plan of mutual or participating insurance, except upon real estate held by such company, which real estate shall be taxable in the several towns wherein situated.

PENALTY FOR NON-RETURN.

SEC. 38. If any person whose duty it shall be to make out and return to the tax commissioner, the statement required in the next preceding section, shall fail so to do, within the time limited by this act, every such person shall, for each failure, forfeit and pay to said tax commissioner, for the use of the state, the sum of five hundred dollars, to be recovered in the name of said commissioner by action on this statute.

FOREIGN INSURANCE COMPANIES—AGENTS.

SEC. 39. Every person who shall act as agent in this state of any corporation, company or association, organized under the laws of any other state or foreign country, to effect insurance in this state against loss or injury by fire or water, or upon lives, or against accident, and every person who shall act in this state in procuring such insurance, or shall in any way engage in soliciting, obtaining, receiving or forwarding applications for such insurance, shall, within the first ten days of October in each year, in which so acting or engaged, make return under oath to the tax commissioner of the amount insured by or through him as aforesaid in this state during the year ending on the 1st day of said October, and the amount of premiums received and assessments collected on account of such insurance during said year. Such return shall state the name and location of each company in which insurance shall have been effected as aforesaid, the amount of such insurance in each company, and the amount of premiums and assessments received and collected on account of each; and every such person shall, on or before the 20th day of said October, pay to said tax commissioner a sum equal to two per cent. on the gross amount of such premiums and assessments; *provided*, that if any such person be a broker or agent for any life insurance company, organized under the laws of any other state within the United States, which imposes a tax under a reciprocal law, upon the business of life insurance companies established by the laws of this state, he shall pay on the business of life insurance transacted by him such tax as is imposed by the 384th and 385th sections of an "act concerning communities and corporations," in lieu of all other taxes imposed on such life insurance companies by this section.

EXPRESS COMPANIES.

SEC. 40. The secretaries, treasurers, superintendents or managers of the several express companies, whether individual or copartnership, now or hereafter doing express business in this state, shall, within the first ten days of October, annually, return under oath to the tax commissioner, true and full statements of the gross amount of express charges paid to said companies respectively, at each of the offices or places of business of said companies within this state, and each of said companies shall, within the first twenty days of said October, pay to the tax commissioner two per cent. of the gross amount of all such charges paid to such company, whether individual or copartnership, within this state, during the year ending on the 1st day of October, which sum or tax shall be in lieu of all other taxes payable by such company, except upon its real estate, which real estate, if within this state, shall be liable to town taxation; *provided*, that whenever any such company shall fail to make such returns, the tax commissioner may accept from such company, whether individual or copartnership, the sum of two thousand dollars in lieu of and in full satisfaction of the tax then due from such company under this section.

TELEGRAPH COMPANIES.

Sec. 41. The secretaries, treasurers, superintendents or managers of the several telegraph companies now or hereafter doing telegraph business in this state, shall, within the first ten days of October, annually, return, under oath, to the tax commissioner, true and full statements of the gross amount of receipts for telegraph messages at each of the offices or places of business of such respective companies within this state; and each of such companies shall, within the first twenty days of said October, pay to the tax commissioner the sum of two per cent. of the gross amount of all receipts for telegraphic messages paid to such company within this state during the year ending on the 1st day of said October, which sum or tax shall be in lieu of all other taxes payable by such company under this section, except upon its real estate, which real estate, if within this state, shall be liable to town taxation.

STATE BONDS.

Sec. 42. All bonds of this state, issued or hereafter to be issued, except such as are exempted under the provision of an act of the general assembly, approved July 14, A. D. 1865, shall pay a tax of 8-10 of one per cent. on the par value thereof; and the state treasurer shall deduct and retain for the use of the state one moiety of said tax from the semi-annual interest coupons of said bonds, as they severally become due and payable, which tax shall be in lieu of all other taxation upon said bonds.

PENALTIES.

SEC. 43. Any corporation neglecting or refusing to make returns according to the provisions of this act, or to submit to the examination of its books or officers, as required by said provisions, shall forfeit two per cent. on the par value of its capital stock, which penalty may be recovered in an action of tort brought in the name of the state to the superior court in the county in which such corporation has its office and place of business, or in the county in which the tax commissioner has his office.

PENALTIES CONTINUED.

SEC. 44. If any corporation fails to pay the taxes as required by this act, the tax commissioner may forthwith commence an action of assumpsit in his own name as tax commissioner for the recovery thereof, with interest. The penalties under this act and the duties enjoined upon corporations or their officers and agents may be enforced, and all taxes due from corporations may be collected by information brought to the superior court of any county at the relation of said tax commissioner; and upon such information the court may issue an injunction restraining such corporation from the further prosecution of its business, until all taxes due, and all penalties incurred under this act shall be paid with interest and costs; and until all returns required and duties enjoined by this act shall be complied with; and in any proceeding under this section, the certificate of the tax commissioner shall be competent evidence of all determinations made, and notices given by him; and of all values, amounts and other facts required to be determined by him under this act.

GUARDIAN—RETURN OF STOCK.

SEC. 45. Every guardian who holds or whose ward holds stock in any corporation except such as are embraced in section 17, and every executor, administrator or other person who holds in trust any such stock, shall, between the 1st and 10th days of October, annually, return under oath to the tax commissioner the name and residence on the 1st day of said October, of themselves and all such wards or other persons to whom any portion of the income from such stock is payable, the number of shares so held, and the name and location of the corporation in which they are held.

COPARTNERS—RETURN OF STOCK.

SEC. 46. Every copartnership shall also within the same days annually make a like return, stating the amount of stock owned by the firm, and the names and residence of each partner and the proportional interest of each partner in such stock; and any guardian, executor, administrator, trustee or copartnership, neglecting to comply with said requirements, shall forfeit the sum of one hundred dollars, which penalty may be recovered in an action brought by the tax commissioner.

TAX CREDIT TO TOWNS.

SEC. 47. So much of the amount of taxes received from corporations described in sections 23 and 34, as is represented by shareholders or depositors residing in this state, shall be credited to the respective towns wherein such shareholders were severally returned as last residing on the 1st day of October, and such depositors were last returned as residing on the 1st day of July, in proportion to the amount of such stock or deposits held by them in such town; and the same rule shall apply to the taxes received from the shares of national banks under section 33, except so far as the same may be inconsistent with the act of congress, approved February 10, A. D. 1868, relative to the shares of non-resident shareholders in such banks.

NOTICE OF CREDIT.

SEC. 48. The tax commissioner shall certify the several amounts so credited to the several towns to the state treasurer, and the same shall be deducted from the amount of taxes payable by such towns to the state; said commissioner shall also notify the treasurer of each town of the amount so credited, and the name and residence of each shareholder or depositor on whose account the same is credited.

TAXABLE CORPORATIONS—LIST OF.

SEC. 49. The tax commissioner shall annually, on or before the 1st day of January, return to the assessors of each of the several towns a list of all Connecticut corporations known to him to be taxable on the 1st day of October next preceding, with the place of their location; and shall also from time to time furnish such assessors with all such other information in his possession as in his judgment will assist such assessors in the proper assessment of taxes; and if any such corporation, known to any assessor, shall be omitted in said list, such assessor shall report the same to the town clerk of the town in which such corporation is located, to be returned as provided in section 26 of this act.

AUCTIONEERS.

Sec. 50. Every auctioneer or other person who shall sell any kind of property by public auction, except his own, shall, before making such sale, obtain a written license as auctioneer, signed by a majority of the selectmen of the town wherein he resides, for which license he shall pay a fee of five dollars into the treasury of said town, and said license shall be valid and in force for one year from the date thereof. He shall also return quarterly, on the 1st week days of January, April, July and October, to the treasurer of said town, the gross amount of all sales by him so made by auction during the preceding quarter, and shall pay to said treasurer, for the use of the town, 1-10th of one per cent. on such gross amount; and for any violation of this section, such auctioneer or other person so offending, shall forfeit and pay for the use of such town a penalty of not less than fifty dollars, nor over five hundred dollars, to be recovered by suit brought in the name of such treasurer; *provided*, that nothing in this section shall apply to the sale of any property by any sheriff, deputy sheriff, constable or other public officer, taken and sold by due process of law, or by order of any court or judge, when the sale is made in person by such sheriff or other officer.

RETURNS BY SAVINGS DEPOSITORS.

Sec. 51. Every person having deposits in any savings bank, savings society or other association for savings, shall annually return, under oath, to the town assessors, a statement appended to his list, but not to be included therein for town taxation, of all such deposits in which he has any pecuniary interest, directly or indirectly, whether such deposits stand in his own name, or as trustee for others, or in the name of any other person; and shall state the name and location of each bank or savings association wherein such deposits are, and the whole amount deposited in each.

And said assessors shall annually, on or before November 20, return to the tax commissioner the names of the several depositors in their respective towns, the amounts so deposited by each, aud the name and location of the savings bank or other savings association wherein such amounts are severally deposited.

PROPERTY, WHERE TAXABLE.

Sec. 52. All real estate, as defined in section 3, and all personal estate, as defined in section 4 of this act, except the property or franchise or shares of corporations otherwise taxed under sections 17, 25, 33, 34, 36, 37, 39, 40, 41, and except the bonds issued by this state, shall be set in the list of their respective towns wherein such real estate is situated, or wherein the owners of such personal estate resided, severally, on the 1st day of October next preceding; and shall be taxable for general or local purposes as follows, viz: for all state, county, or town purposes, in the town wherein situated, if real estate, or wherein the owner resided, as aforesaid, if personal estate; and for all school society, school district, or parish purposes, in the society, district or parish in which such real estate is situated, or the owner of such personal estate resided as aforesaid; and the shares of such corporations are not exempt under sections 22, 25, 33, 34, from certain local taxes, shall be taxable for such local purposes in the same manner.

POLL TAXES.

Sec. 53. Any town at a legal town meeting duly warned for the purpose, shall have power to levy a tax for its own use and benefit, upon the polls of all white male residents of such town, between the ages of 21 and 70 years, who were therein residing on the 1st day of October next prior to such levy, and had been so residing for one year next preceding, not exceeding in amount the sum of two dollars upon each poll; and the tax so levied shall be valid and collected in the same manner as is provided for the collection of other town taxes; and such town may exempt from liability to poll taxation, such classes of persons between the ages of 21 and 70 years, as they may deem equitable and expedient; and whenever any town shall have so levied a poll tax for any one year, the same shall be held to be a continuous order for such levy in every succeeding year, until otherwise ordered by the town at a meeting warned for the purpose.

TOWN ASSESSORS—HOW CHOSEN.

Sec. 54. At the next annual town meeting of the several towns, or at any special town meeting, duly warned and held for the purpose in the month of September next ensuing, there shall be chosen, by ballot, in each town, a board of assessors and a board of relief, to consist of three judicious electors each, who shall hold office until their respective successors are duly chosen and qualified as hereinafter provided. One of each board, to be designated on the ballots, shall be chosen for a term of one year; one other of each board for a term of two years; and one other of each board for a term of three years; and at every annual election thereafter, one member of each board shall be chosen in like manner for a term of three years, and until his successor shall be duly chosen and qualified; and in case of any vacancy in either of said offices, by removal, death, resignation or otherwise, the same may be filled, until the next legal town meeting, by a majority of the selectmen, at which next town meeting the said vacancy may be filled, by ballot, for the then unexpired term.

OATH OF ASSESSORS.

Sec. 55. Every assessor, before entering upon the duties of his office, shall take the following oath:

"You [A. B.] do solemnly swear that you will faithfully and impartially discharge the duties of the office of assessor for which you have been chosen, and that you will truly and justly assess and appraise all property to be by you assessed and appraised at its actual market value, such as, in your judgment, it would sell for at fair private sale, and not at any forced or auction sale, and at such value as you would appraise it under oath, if taken in payment of a just debt, due from a solvent debtor; and that the abstract or returns of assessments by you to be made and subscribed shall contain a full statement of all the taxable property to be assessed and returned by you, and at the value so found by you, as aforesaid. So help you God."

OATH OF BOARD OF RELIEF.

SEC. 56. Every member of the board of relief, before he enters upon the duties of his office, shall take the following oath:

"You [A. B.] do solemnly swear that you will faithfully and impartially discharge the duties of the office of a member of the board of relief, in accordance with your best judgment, and in every respect in conformity to law. So help you God."

TOWNS FAILING TO ASSESS.

SEC. 57. Every town which shall refuse or neglect to appoint assessors, or from any cause shall fail to have assessments made as herein provided, shall, for each year of such refusal, neglect or failure, forfeit, for the use of the treasury of the state, a sum equal to double the amount of the state tax last apportioned to such town.

ASSESSORS REFUSING TO ACT.

SEC. 58. Every assessor, duly chosen, who shall refuse to be sworn according to law, and shall fail or refuse to submit his resignation, in writing, to the selectmen immediately, whenever the administration of the oath is tendered to him by proper authority and so by him refused, shall forfeit and pay to the treasurer of such town, for the use of the town, a penalty of three hundred dollars.

NOTICE TO LISTERS.

SEC. 59. The assessors shall, at least five days before the 20th day of October, annually, post a notice upon the public sign posts of their respective towns, or publish the same in a newspaper published in such town, requiring all persons liable to pay taxes in such town to present to them written or printed lists of the property liable to taxation, in such town, belonging to them, or to be returned by them severally on the 1st day of October in that year, which lists shall be made, perfected and sworn to in the manner herein provided.

LISTS—WHEN PRESENTED.

SEC. 60. Every person liable to give in such list shall make and perfect the same, and make oath thereto that the said list, according to his best knowledge, remembrance and belief, is a true statement of all his property liable to taxation in said town, or required to be by him returned to the assessors thereof, and that he has not conveyed or temporarily disposed of any estate for the purpose of evading the provisions of this act, which oath may be administered by an assessor or other proper officer, and said lists, so made, perfected and sworn to, shall be delivered to the assessors on or before the 1st day of November in each year.

PROPERTY OUT OF THE STATE.

SEC. 61. All personal property situated without this state, if the owner thereof is a resident of this state, shall be embraced in his list, with a description of the same and the place where located; but whenever it shall be made to appear by proper evidence, before the assessors, that such property has not been temporarily removed or detained out of this state to evade taxation, and that the same is liable by the laws of the state wherein situated to be therein taxed to the same extent as is other like property of the citizens of such state, such property shall not be taxable in this state, nor the value of it added to the amount of any list or abstract, so long as the same shall remain without this state, as aforesaid.

REFUSAL TO PRESENT LIST.

SEC. 62. If any assessor or member of the board of relief shall neglect or refuse to give in his list, made and sworn to as herein prescribed, he shall forfeit the sum of fifty dollars to the treasurer, and for the use of the town in which he is an assessor or member of the board of relief, to be recovered by such treasurer in an action on this statute; if any such officer, or any other person liable to give in his list, shall fail to deliver the same to the assessors, duly made and sworn to as herein prescribed, on or before the 1st day of November in each year, the board of assessors shall fill out a list for such officer or person, including therein all property which they have reason to believe should be included for taxation or be returned therein by such person, and shall, unless such person is a non-resident of such town, add ten per cent. to their assessed value thereof; and no person, except a non-resident, who shall fail or neglect to give in his list as herein prescribed, shall be allowed any deduction from the list made by the assessors, nor be heard before the board of relief, except upon evidence satisfactory to said board of relief that the gross amount of such list exceeds in value, by more than fifty per cent., the whole gross amount of his property subject to taxation in such town, in which case said board of relief may reduce said amount so much as they shall find it to be in excess of fifty per cent. above the amount liable to taxation, and no more.

ADDITIONS TO LISTS—NOTICES.

SEC. 63. The assessors in each town shall add to the list of any person liable to be taxed therein any property omitted in his list, which they have reason to believe is owned by such person and liable to such taxation, whether such property can or cannot be specifically pointed out and described; but in case the list to which such property is added shall have been made and sworn to as prescribed, said assessors shall give notice in writing to such owner of such addition on or before the 20th day of December then next following. And in all cases where the assessors or members of the board of relief are required by this act to give notice of addition to, or increase of, any person's list to the person affected thereby, a written or printed notice, signed by an assessor or member of the board of relief, and deposited, post paid, in any post office of the town wherein he resides, addressed to the name and reputed residence of the person thereby affected, shall be sufficient notice, or actual notice in writing may be given in any other manner.

PENALTY FOR ACCEPTING LIST NOT SWORN TO.

SEC. 64. Every assessor who shall receive and accept any list not made, sworn to and delivered in the manner by law prescribed, shall forfeit to the treasury, and for the use of the town in which he is an assessor, the sum of two hundred dollars, to be recovered by the treasurer of such town in an action on this statute.

PERFECTING OF LISTS AND ABSTRACT.

SEC. 65. When the lists of any town shall have been received or made by the assessors, they shall, if necessary, equalize the same; make any other assessments omitted by mistake or required by law; arrange said lists in alphabetical order; make an abstract thereof, and lodge such lists and abstract in the office of the town clerk of such town on or before the 15th day of December in each year; and the town clerk shall exhibit such lists and abstract, when required, to the inspection of every person liable to pay taxes in such town.

NON-RESIDENT LISTS.

SEC. 66. The taxable property of non-residents shall be arranged in separate lists, and valued by the assessors from the best information to be obtained, either with or without the lists of the owners.

ABSTRACT SWORN TO.

SEC. 67. Every assessor, at or before the time of lodging his abstract of the assessment lists with the town clerk, shall take and subscribe the following oath, which shall be certified by the officer administering the same, and endorsed upon or attached to said abstract, viz:

"I, [A. B.,] assessor of the town of [ ] do swear that I verily believe that all the lists and the abstract of said town, for the year [ ], are made up and perfected in every respect according to law. So help me God."

BOARD OF RELIEF—MEETINGS.

SEC. 68. The board of relief in each town shall meet on the first Monday in January, annually, and shall give at least ten days' previous notice of the time and place of such meeting by posting such notice on the public sign posts of their respective towns, or by publishing the same in some public newspaper published in such town ; and said board may adjourn from time to time until they shall have completed the duties of their office.

APPEALS FROM ASSESSORS.

Sec. 69. Any person aggrieved by the action of the assessors in regard to his list, if such list has been by him duly returned and sworn to, may, at any meeting of said board of relief, make his appeal from the doings of the assessors; and said board shall hear and determine finally all such appeals, and shall equalize and adjust the valuations and assessment lists of such town, so far as they shall judge to be equitable and just, whether appeals are made or not made to them, as aforesaid; but no appeal from the doings of the assessors shall be heard or entertained by said board, unless the same shall be made to said board at its first meeting in January in such year, or at some adjourned meeting holden within twenty days thereafter.

ADDITIONS TO LISTS, BY BOARD OF RELIEF.

Sec. 70. The board of appeals may increase the list of any person, by adding new items, or by increasing the number, quantity, amount or valuation of any item therein, or by adding thereto any taxable property, estate or interest omitted by the assessors; and said board may add to said lists the name and list of any person omitted by the assessors, and the value of the taxable property omitted ; but before adding any new list, or increasing the amount of any list duly sworn to, said board shall give notice, in the manner in this act prescribed, to the person thereby affected, at least three days prior to such addition or increase, to appear before said board and show cause why such addition or increase should not be made.

REDUCTION OF LISTS—PENALTY.

Sec. 71. The board of relief may reduce the list of any person by erasing therefrom any item, in their judgment improperly included, or by reducing the number, quantity, amount or valuation of any item of estate in such list; but they shall in no case reduce the list of any person who shall not offer, or who shall refuse to be sworn before them, and to answer all questions which may be put to him by any member of said board, or by either of the assessors present, touching his property, of any description liable to taxation; nor shall said board, in any case whatever, erase any item, or in any other manner reduce or diminish the amount of any person's list, or of any item of estate therein, unless such list shall have been by such person duly made and sworn to as in this act prescribed, or unless such person is a non-resident of such town, or unless such person, being a resident of such town, shall show to the satisfaction of said board that by reason of sickness, necessary absence, or other unavoidable cause, he was prevented from making out his list, in which cases said board may make such reductions therefrom as they may deem just and reasonable; and if any member of the board of relief shall reduce any list, or the amount, or any item thereof, contrary to the provisions of this and of the 62d section of this act, he shall forfeit and pay to the treasury, and for the use of the town in which he was chosen assessor, the sum of fifty dollars, to be recovered in an action on this statute in the name of such town treasurer.

ABSTRACTS—RETURN OF TO TAX COMMISSIONER.

SEC. 72. The town clerks of the several towns shall annually, on or before the 1st day of April, transmit, by mail or otherwise, to the tax commissioner, an abstract of the lists of their respective towns, made up in such form as said commissioner shall prescribe; and said commissioner shall furnish to each of said town clerks the necessary blanks in form for such purpose; and the said town clerks shall certify under their hands, on their respective abstracts, that the same is a true and just abstract of the lists and assessments of the town therein named; and every town clerk who shall fail or neglect to transmit such abstract, as herein required, shall forfeit to said commissioner, for the use of the state, the sum of fifteen dollars, to be recovered by said commissioner in an action on this statute.

CERTAIN PROPERTY—TO WHOM TAXABLE.

SEC. 73. Personal property in the hands of a trustee shall be set in the name of such trustee in the list of the town wherein such property is situated, whether such trustee is a resident or non-resident of this state; and if there be more than one trustee, then in the name of the principal trustee having the care of such property. The taxable property of married women shall be set in the lists of their husbands. All real estate shall be set in the list of the owner or possessor; but whenever one party is entitled to the fee simple of any real estate, or to the ultimate enjoyment of money at interest or other personal estate, and another party is entitled to the use of the same as an estate for life or for a term of years, by gift or devise, and not by contract, the taxes on such estate shall be paid by the party in immediate possession or use of such estate, except when it is otherwise specially provided.

INSOLVENT ESTATES—HOW SET IN LIST.

SEC. 74. The real and personal estate, liable to taxation, of an insolvent debtor or deceased person, not finally disposed of by any court of probate or other insolvent's court, or by any proceedings in bankruptcy, may be set in the list, either in the name of the estate of such debtor or deceased person, or trustee, executor or administrator of such estate, as such, at the option of the person liable to present the list of such property to the assessors; and such property, or any part thereof, when so set in the assessment list, shall be liable for all taxes legally imposed thereon for the term of one year from the time when such taxes became due, whether such property shall or shall not then remain in the hands of the trustee, executor, administrator, heirs or devisees.

TAX RULE FOR MERCHANTS.

SEC. 75. The interest of any trading, mercantile, commission or storage business, individual or copartnership, except that of corporations, shall be valued and assessed in the town wherein the business is carried on, whether the owner or owners reside therein or not; such valuation and assessment, if copartnership, shall be made in the company name; and any person having charge of the business shall be authorized and required to list the same, when the owner or owners are non-residents of such town. The average amount of goods kept on hand, or on storage, or on commission or consignment during the year, or any portion of the year when the business has not been carried on for a year, previous to the first day of October in each year, including all goods so kept on hand, whether by purchase or on commission, storage or consignment from persons resident or non-resident of this state, excepting goods *in transitu* for points of destination beyond this state, shall be the rule of valuation and taxation under this section; but merchants shall also be further liable to be assessed for any amount of indebtedness due them from responsible persons, over and above their liabilities.

Traders of any kind, when their business is not located, shall be assessed in the town in which they reside, and under the same rule of valuation provided in this section.

TAX RULE FOR MANUFACTURERS.

SEC. 76. The interest of any manufacturing or mechanical business, individual or copartnership, except that of corporations, shall be valued and assessed in the town wherein such business is carried on, whether the owner or owners reside therein or not. Such valuation and assessment, if copartnership, shall be made in the company name, and any person having charge of the business shall be authorized and required to list the same, if such owner or owners are non-residents of such town. Said lists shall state each kind and the whole value of each kind of articles manufactured for sale or profit, during the year ending October 1st next preceding, and also the aggregate market value of all such articles; and one-tenth of the whole amount of such aggregate value shall be set in the list for taxation, and shall be the rule of valuation and taxation under this section.

ASSESSMENTS TO WRONG PERSON.

Sec. 77. Any property assessed and set in the list to the wrong person may be erased by the assessors from such person's list, at any time previous to the payment of the tax thereon; and if the right owner is a resident of the same town, or if the property be real estate therein taxable, the assessors shall add the same to the list of such right owner, and give him written notice thereof by mail or otherwise; but if such owner is a resident of another town in this state, said assessors shall give notice, by mail or otherwise, to the assessors of such other town of such ownership, if personal property, and the assessors last named shall add the same to such owner's list, and give him notice thereof, as aforesaid.

WRONG PAYMENT OF TAX.

Sec. 78. Whenever any person, by inadvertence or otherwise, shall have paid a tax on any property erroneously set in his list or included in the rate bill, and which should have been set in the list or rate bill to some other person, such payment shall be refunded by such other person or party to the person so paying the same, on his demand, and on failure or refusal, the same may be recovered, in any proper action, of the person or party so refusing, together with interest thereon, at the rate of twelve per cent. per annum from the time of such payment, and double costs of suit.

Sec. 79. The assessment list of each town, as the same shall annually be made and corrected by the assessors and board of relief, according to the provisions of this act, shall be the list on which all county, town, school or other society, school district and highway taxes shall be laid; and all such taxes shall be laid upon the list last so made and completed.

CHAPTER II.

OF THE COLLECTION OF TAXES.

Sec. 80. Whenever the general assembly shall grant a tax to be raised for state purposes, the same shall be laid upon all the property, rights, privileges, and franchises subject to taxation for such purposes ; and the selectmen of the respective towns shall cause the gross amount of the tax due from such town, under the last apportionment to the respective towns made by the general assembly, to be paid into the treasury of the state, on or before the 20th day of March next after the laying of such tax, without any abatement or deduction, except for credits due to such town, on the books of the state treasurer; and if the whole or any part of the amount of the tax so due from any town shall remain unpaid after the said 20th day of March, the state treasurer shall add thereto a sum at the rate of one per cent. per month upon the amount so remaining unpaid, until the same is paid, which addition shall thereby be and become a part of said tax.

Sec. 81. If any town shall not pay such tax to the treasurer within the time specified, the treasurer shall forthwith issue an execution, returnable in sixty days, against the goods or estate of the selectmen of such town, for the sum remaining due on said tax, which execution shall be directed to the sheriff of the county in which such town is situated, who shall serve and return the same according to the directions therein given.

Sec. 82. If the execution against the selectmen shall be returned unsatisfied, in whole or in part, the treasurer shall forthwith issue an execution returnable in sixty days, for the sum remaining due on said tax, with the officer's fees and charges before that time accruing, against the goods and estate of the inhabitants of such town, to be directed and served as aforesaid.

Sec. 83. If the sheriff shall be guilty of any neglect or default in serving the executions aforesaid, he shall be liable to pay all the damages ; and the treasurer shall direct suits to be brought against him, in the name of the state, by the attorney for the state in the county where the treasurer has his office, to recover such damages; and such attorney may commence and prosecute such suits to final judgment.

Sec. 84. Whenever the estate of a selectman or inhabitant of a town shall be taken on execution issued against such selectmen, or the inhabitants of any town, according to the provisions of this act, such selectman or inhabitant may apply to a justice of the peace of an adjoining town, to appoint appraisers of the same, and such justice of the peace shall appoint three judicious, disinterested electors of said town to appraise the estate so taken on execution, at its true and just value in money; and if the same shall be sold for the payment of such execution, then such appraised value shall be paid by the town from which such taxes were due, with such further damages as shall be just and reasonable; and on the refusal of the town, the owner shall have a right of action to recover the same.

Sec. 85. Whenever any town, or other community, authorized by law to raise money by taxation, shall lay a tax, they shall appoint some proper person, or persons, to be collector, or collectors thereof; and the selectmen of towns, and the committee of other communities, shall make out rate bills for the same, under their hands, containing the proportion which each person is to pay, according to the list made and completed in the mode required by law, and shall apply to some justice of the peace to issue a warrant for collecting such tax, directed to the collector appointed to collect the same, commanding and empowering him to collect such tax; and such justice of the peace shall thereupon issue such warrant.

Sec. 86. Whenever any town, or other community, shall have legally laid a tax, and the selectmen, or committee of such community, shall have made out a rate bill therefor, and delivered the same to the collector, without having procured a warrant from a justice of the peace, for the collection of the same, such selectmen, or committee, or their successors in office, may apply to some justice of the peace to issue a warrant for the collection of such tax, or of such portion thereof as shall remain uncollected at the time of issuing such warrant; and said justice shall, on such application, issue such warrant; and the collector to whom such warrant shall be directed, shall have the same powers for the collection of such tax, under such warrant, as if the same had been issued in the manner, and at the time prescribed in the next preceding section of this act.

Sec. 87. Every collector of town taxes shall, at or before the time when he receives any warrant, or rate bill, for the collection of any such tax, give the town in which he is collector a bond, with sureties, to the acceptance of the selectmen of such town, for the faithful payment, according to law, of all moneys received by him, as such collector, under the provisions of this act.

Sec. 88. The collectors of taxes shall collect and pay the same within the time limited respectively by the town, or community, imposing the same; and if any collector shall neglect so to do, the selectmen of the town, or the committee of the community, as the case may be, may demand any arrearages due from such collector, and on failure of payment, may apply to a justice of the peace for an execution against such collector; and such justice of the peace shall issue an execution against the goods, chattels, lands, and body of such collector, in the same form, and to be proceeded with in the same manner, as executions in civil actions.

Sec. 89. If any collector of the tax of any town, or other community, shall neglect or refuse to receive the rate bills of the tax which he is appointed to collect, for the purpose of collecting the same, or shall die before he shall have completed the collection of such tax, or, having received said rate blil, shall neglect to collect or pay such tax, by the time appointed for that purpose, and shall deliver up his rate bill to the selectmen of the town, or the committee of the community where he is appointed, as the case may be, or, in case of a town tax, shall neglect or refuse to give the bond required by law, or whenever any town shall have neglected to appoint a collector at its annual meeting, or whenever the office of collector shall, in any way, become vacant, the selectmen of such town, or the committee of such community, as the case may be, may depute some proper person to collect such rate bill, or so much thereof as remains due; and the person so deputed shall complete the collection of the tax; but the person deputed to collect the town tax, shall give bonds at the time, and in the manner prescribed in this act for town collectors.

Sec. 90. If the collector of the taxes of any town, city, or other community, shall neglect to perform the duties of his appointment, or shall neglect to collect and pay over the taxes intrusted to him for collection, within a reasonable time after the same shall become due and payable, or shall fail to give a bond which shall be satisfactory to the proper officers whose duty it is to receive and hold the same, the selectmen of any town, or the mayor and alderman of any city, or the board of education, or committee of any school district, or of any other community, as the case may be, may make application to any judge of the superior court, setting forth the facts aforesaid, of which application such reasonable notice as such judge may direct, shall be given to such collector, and at the time appointed for the hearing of such application, said judge shall enquire into the truth of the facts therein set forth, and upon finding them true, may remove such collector from office ; and upon the order and decree of said judge, declaring the same, the office of such collector shall be deemed vacant from the time of such order and decree; but nothing contained in this section shall affect any bond given by any collector for the faithful performance of his duty, or discharge, or in any way affect the surety upon such bond.

Sec. 91. The vacancy which shall have been declared in the office of collector, under the provisions of the next preceding section, shall be filled in the manner provided in this act for filling vacancies in such office.

Sec. 92. Whenever the collector of the taxes of any town, city or other community, shall have settled his rate bill with the selectmen, or other proper officers for auditing and settling the same, and shall have failed to complete the collection of the tax in his life-time, the executor or administrator of such deceased collector may, at any time within six years after the decease of such collector, sue for and recover the amount of such uncollected taxes from the persons liable to pay the same, together with interest thereon, in an action of general assumpsit as for money paid, or in any other proper form of action.

Sec. 93. The selectmen of the several towns may abate the town taxes of such persons in their respective towns as are poor and unable to pay the same ; and said selectmen shall exhibit to their respective towns, at each annual town meeting thereof, a list of all persons whose taxes shall have been abated within the year next preceding said meeting.

Sec. 94. The real and personal property, to the amount of three thousand dollars, of any person who, by reason of blindness, is unable by his labor and services to support himself and family, may be exempted from taxation by the selectmen of the town in which such property is located. *Provided*, that when such person owns property in different towns, the exemptions granted in such town shall not in the whole exceed the sum aforesaid.

Sec. 95. The committee of any ecclesiastical society, or of any other community, may abate the taxes assessed by their respective communities, upon such persons as are poor and indigent, and unable to pay the same.

Sec. 96. Collectors duly appointed shall have power to collect the taxes for which a lawful warrant shall have been given to them respectively; and shall have the same power to command assistance in the execution of their office, as sheriffs and constables in the execution of their office; and if any person shall neglect or refuse to render such assistance to a collector, when legally required, he shall be liable to the same penalty as are persons who neglect or refuse to assist sheriffs; but such collector shall show and read his warrant to the person whose assistance is commanded.

Sec. 97. All collectors of taxes shall have the same power in any other town as in their own, to collect the taxes of any person against whom they have taxes in their rate bill; and may at any time collect such taxes, although after the expiration of the year for which they are appointed.

Sec. 98. The collectors appointed to collect the town taxes shall publish a notice of the time and place at which they will receive the same, in some newspaper published in the county, or in an adjoining county, and shall also post such notice on the sign-posts of their respective towns, at least three successive weeks next preceding the time appointed therein for receiving such taxes; and the collectors of other taxes shall appoint a time and place for receiving such taxes, and shall give to every person reasonable warning and opportunity to pay the same; and if any person shall fail to pay any tax, the collector may make distress therefor; and in case a distress shall be made, such collector shall distrain goods and chattels if they can be found, and shall post and sell them in the same manner as is provided by law, in case of executions; but if no goods or chattels are tendered, or can be found, such collector may levy his warrant on the real estate, or on the body of such person, and commit him to jail, there to remain until he shall pay such taxes and the legal costs, or be discharged in due course of law; and all collectors of taxes, after notice as aforesaid, shall be entitled to the same fees for collecting said taxes, and for levying warrants, as sheriffs are by law allowed for levying or collecting executions.

Sec. 99. If any tax laid by any town, city, school society, or school district, shall remain unpaid one month or more, after legal notice from the collector thereof, that he is prepared to receive the same, said collector shall add one per cent. to the amount of said tax for each month said tax shall so remain unpaid, and the same shall thereby become and be collectable as a part of such tax; and said collector shall keep a separate and accurate account of all moneys received, and when and from whom received, from the per centage added to their rate bills under this section.

Sec. 100. Whenever any collector shall levy a warrant on real estate, for the collection of any tax, he shall advertise the time and place of sale three weeks, in some newspaper published in the county wherein such real estate is located, or in any adjoining county, at least six weeks before the time of sale; and at such time and place, if such tax and the fees and costs thereon shall remain unpaid, said collector shall sell at public auction enough of such estate to pay the taxes, fees, and costs due from the owner; and shall give to the purchaser a deed of warranty thereof, to be lodged in the office of the town clerk, where the land lies, to remain unrecorded one year; and if the owner from whom the tax was due, or any purchaser, mortgagee, or creditor of such owner, or any person having any interest in such estate, shall, within one year from the time of such sale, pay, or tender to the purchaser the amount of the purchase money, with twelve per cent. interest, such deed shall be void, and shall be delivered up to the person so paying, or tendering such purchase money, who shall hold such estate as security, in the nature of a mortgage, for such money paid, and twelve per cent. interest thereon; but if said purchase money and interest shall not be paid within such time, then said deed shall be recorded, and the title become confirmed in the purchaser, his heirs and assigns forever.

Sec. 101. Whenever any person committed to jail by the collector of any tax for the non-payment of such tax, shall be poor and unable to pay it, he shall be entitled to the benefits of the provisions for the relief of poor debtors in the act concerning prisons, on his giving the requisite notice to one or more of the selectmen of the town laying such tax, or to one or more of the proper officers, or committee of the community levying the same; and if such person shall be admitted to take the poor debtor's oath, the town, or community, as the case may be, imposing such tax, shall be responsible to such collector for the amount of such tax and the costs of such commitment; and if such town or community shall neglect or refuse to pay the same, such collector shall have a right of action against such town or community to recover the same; *provided*, that such commitment be made within eight months after the time when such tax became due and payable.

Sec. 102. The real estate of which any person is seized and possessed, in his own right and fee, shall stand charged with all his lawful taxes, and may be levied upon within one year after said taxes become due, and sold for the same, notwithstanding any transfer thereof, or any levy of any attachment or execution thereon; but no real estate, which has been transferred or levied upon, as aforesaid, shall be liable to be sold for the payment of any tax laid upon a list made after such transfer or levy; nor shall any real estate be liable to be sold for taxes, which has been legally transferred, attached, or taken on execution, when other sufficient estate can be found.

CHAPTER III.

OF THE COLLECTION OF TAXES IN HARTFORD AND NEW HAVEN.

COLLECTIONS IN HARTFORD.

Sec. 103. All taxes laid by either the town or the city of Hartford, shall be payable and collectable on or before the 15th day of July next after the same are laid, and if paid on or before said day, two per cent. discount shall be allowed thereon, and no discount shall be allowed thereafter. On all such taxes remaining due and unpaid after the 1st day of August, next after the same are laid, one per cent. shall be added and made collectable as a part of such tax, and a further sum of one per cent., shall be, in like manner, added and made collectable, on the first day of each succeeding month thereafter, until such tax is paid.

Sec. 104. The collector, or collectors, of each of the aforesaid taxes, shall, on or before the 5th day of July, annually, give written or printed notice to each tax payer on his rate bill, stating the amount of his tax, and that the same is payable at the office of such collector; and such notice shall also contain a copy of the preceding section of this chapter, or a full and plain abstract thereof; and shall also further publish on or before said 5th day of July, and continue such publication daily, until the 15th day of said July, a like notice, except as to the amount of such tax, in at least two daily newspapers published in said town or city.

Sec. 105. Each collector aforesaid shall, on or before the 10th day of December, annually, give further notice, written or printed, to each tax payer on his rate bill, whose tax shall then remain due and unpaid, that unless the same is paid on or before the 1st day of January next succeeding, the said tax, with accrued and accruing additional per centage, will be immediately thereafter collected by warrant of distress, together with 25 cents fees for such notice, and 50 cents fees for such warrant, which additional per centage and fees it shall be lawful to add and collect.

Sec. 106. A written or printed notice, deposited in the post office in Hartford, addressed to the tax payer, at the post office delivery within which he resides, where the same is known, or actual written or printed notice, given in any other manner, shall be sufficient notice under this act; but no notice other than that required to be publicly advertised, shall be held or construed to be an essential legal prerequisite for the enforced collection of any of said taxes.

Sec. 107. In case the laying of either the town or city tax for any current year, and the appointment of a rate maker, shall be delayed from any cause, beyond the first day of May, then the same, if it be the town tax and rate maker, shall be laid and appointed by the board of selectmen of said town; and if it be the city tax and rate maker, shall be laid and appointed by the city court of said city, on or before the 10th day of May then next succeeding; and said board of selectmen, and said city court, shall severally fill all vacancies which may occur respectively in the office of rate maker.

SEC. 108. The rate makers shall immediately after their appointment, proceed to make out their respective rate bills, and shall complete and deliver the same to their respective collectors, on or before the 10th day of June next succeeding.

SEC. 109. The collectors of said town and city taxes shall hold their respective offices for the term of two years, and until their successors shall be duly chosen and qualified in their stead.

SEC. 110. Whenever a vacancy shall exist, by death, removal, resignation, or otherwise, in the office of either of said collectors, the remaining collector shall discharge all the duties of said vacant office, for the unexpired portion of the term; and in case a vacancy shall exist, as aforesaid, in both of said offices, the same shall be filled, for the unexpired portion of said term, by a major vote of the selectmen of said town, and the aldermen of said city, at a joint meeting specially called and warned by the mayor of the city, for that purpose.

SEC. 111. The first selectman of said town, and the mayor of said city, shall locate and provide a suitable office for the payment and collection of the respective town and city taxes, the expense of which shall be borne equally between said town and city; and said respective collectors shall keep said office open, and be therein in attendance, for the transaction of all business connected with their respective offices, at all reasonable hours, between nine o'clock in the forenoon and four o'clock in the afternoon, on all ordinary business days.

SEC. 112. The said collectors shall be allowed, annually, in lieu of all other compensation for the collection of said taxes, the sum of three thousand five hundred dollars, payable quarterly, and the portion of said sum, payable to each collector, shall bear the same proportion to the whole sum, as the whole amount of his rate bills bears to the whole aggregate amount of the rate bills of both the town and city, for the current year, to be computed and ascertained by the clerk or clerks of said town and city for the time being, within one month after such rate bills shall have been completed.

Sec. 113. Whenever a complaint shall be made, in writing, by a majority of the selectmen of said town, against any collector of said town taxes, or by a majority of the aldermen of said city, against any collector of said city taxes, to any judge of the Superior Court for incapacity, neglect, fraud, or malfeasance in office, said judge, upon due order of notice, may summon such collector to appear before him and answer thereto, and upon full hearing may remove such collector from his said office.

Sec. 114. The collector of each of the taxes of the town or city of Hartford, shall give a bond, with sufficient surety, in the penal sum of twenty-five thousand dollars, for the faithful discharge of all the duties of his office, which bond, in case of the town collector, shall be executed to the satisfaction of the board of selectmen of said town, and in case of the city collector, to the satisfaction of the mayor of said city.

Sec. 115. Each of said collectors shall pay over to the treasurer of said town or city, by whom his tax collections are receivable, on the first Monday of each month, all moneys by him collected on such taxes, up to the time of such payment.

COLLECTIONS IN NEW HAVEN.

Sec. 116. All taxes laid by either the town or the city of New Haven, or by the New Haven city school district, shall be payable on the 1st day of July next after the same are laid; and the collector of any such tax so payable, shall, upon receiving a lawful warrant for the purpose, proceed to collect such tax from the several persons liable to pay the same, in the manner hereinafter provided.

Sec. 117. If any such taxes shall remain unpaid on the 1st day of August, next after the same are laid, such collector shall immediately give public notice, by daily advertisement in two or more newspapers of said town or city, to be published therein respectively, Sundays excepted, through said month of August, that unless the said taxes shall be paid to him, at his office in said city, on or before the 1st day of September next then ensuing, he will immediately thereafter proceed to collect the same in the manner hereinafter provided.

Sec. 118. If any such taxes shall remain unpaid on said 1st day of September, said collector shall charge, collect and receive an additional sum of one per cent. on the amount then unpaid on such tax; and if any such tax shall remain unpaid on the 1st day of October next succeeding, he shall charge, collect and receive in addition to said one per cent. a further sum of two per cent. on the amount then unpaid; and if remaining unpaid on the 1st day of November next succeeding, he shall then charge, collect and receive such further sum or per centage, in addition to said several former charges on the amount then unpaid, as is provided in the next succeeding section of this act; and all the percentages and additions to such tax herein provided, shall be and become a part of such tax, and shall be collected, accounted for and paid over as such by said collector.

Sec. 119. Whenever any such tax shall remain unpaid on the 1st day of October next after the same is laid, the said collector shall give immediate notice, written or printed, to the person liable therefor, stating therein the amount of such tax and the additional per centage, and requiring such person to pay the same to said collector, at his office, on or before the 1st day of November next ensuing; which notice, if such person is a resident of the town or city of New Haven, shall be left either with him personally, or at his usual place of abode, or business, with some person of suitable age and discretion; or deposited in the post office of said city, if a resident of said city; or in the post office of Fair Haven or Westville respectively, if a resident of either of those voting districts, addressed, post paid, to such person, at least ten days before said 1st day of November. But if such person is a non-resident, such notice shall be left either with him personally, or with his agent; or deposited, post paid, in the post office of said city, addressed to him at his last known post office address, at least ten days before said 1st day of November.

Said collector shall also, immediately after said 1st day of

October, give public notice, in two or more daily newspapers of said city, by advertisement published therein, respectively, at least ten days, notifying all persons whose taxes are then unpaid, to pay the same to him at his office, on or before the 1st day of November next ensuing. And said collector shall make and file in the office of the town clerk of said town, an affidavit that he has given all the notices required in this chapter to be by him given, except so far as the residence or post office address of such persons were to him unknown, and that the residence or post office address of the persons therein named as so excepted, could not by diligent search and inquiry be ascertained; also that he had caused to be published all the public notices required to be published by him under this act; and said collector shall thereupon charge, collect and receive upon all taxes remaining unpaid on and after said 1st day of November, in addition to the per centage then due, under the provisions of the next preceding section, interest at the rate of 12 per cent. per annum, to be computed from the day on which said tax became due and payable; and said collector may make distress for such interest and accrued per centages as a part of said tax, in the manner provided for the collection of other taxes.

Sec. 120. The collector shall enter in suitable books to be by him kept for the purpose, the sums received by him for such taxes, the names of the persons, severally, from whom, and the date when such sums were received; and on the 1st days of October, January, April and July in each year, and at any other time when he shall be required so to do by the officers hereinafter mentioned, he shall render a statement in writing, under oath, of the sums received during the preceding quarter, and the names of the persons from whom, and the date when, the same were severally received, viz: to the selectmen of said town, in case of a town tax; to the mayor of said city, in case of a city tax; and to the clerk of said school district, in case of a city school district tax; and on each and every Monday between the 1st day of July and the 1st day of December, and also on the 1st Monday of each and every other month in each year, he shall pay over to the treasurer of said town, or of said city, or of said school district, as the case may be, the amount received by him up to such time of payment, for all taxes on account of said town, or city, or school district, respectively; and the treasurer to whom the same is paid shall thereupon give to such collector duplicate vouchers for such payment, one of which vouchers shall be by said collector, on the same day, lodged with one of said selectmen, or with the said mayor, or said district clerk, as the case may be, who shall file the same in their respective offices.

Sec. 121. If any such collector shall at any time omit or neglect to furnish to the officers designated in the next preceding section, the said statement and vouchers, or to make the payments as therein prescribed, the said selectmen, in case of the collector of a town tax; and said mayor in case of the collector of a city tax; and the board of education in case of the collector of any such school district tax, shall suspend such collector from his office and take from him the rate bill; and in such case the selectmen of said town, when such collector shall have been appointed by said town; or the mayor and aldermen of said city, when such collector shall have been appointed by said city; or the board of education of said school district, when such collector shall have been appointed by said school district; may depute some proper person to perform the duties of the collector so suspended, and to collect such rate bill, or so much thereof as remains due, until the collector so suspended shall be restored to his office by the authority suspending him, or until another collector shall be appointed in his place; and all the duties prescribed in this chapter shall apply to the person so temporarily deputed.

Sec. 122. The selectmen of said town, in case of a town tax, and the mayor and alderman of said city, in case of a city tax, and the board of education of said district, in case of a city school district tax, if at any time they deem it expedient, may designate in what place the office for the collection and reception of such tax shall be kept, and during what hours of the day the same shall remain open for the reception of taxes.

Sec. 123. The several collectors of the taxes laid by said town, or said city of New Haven, or by the New Haven city school district, shall be paid for their services an annual salary at the rate of three thousand dollars, as the aggregate compensation of all such collectors, not including office rent; and each of such collectors shall be paid such proportion of said salary as the amount of his rate bill bears to the whole amount of all the rate bills of all such collectors for the same current year, to be fixed and determined under this rule by the said selectmen in case of the town collector; by the court of common council of said city in case of a city collector; and by said board of education in case of a school district collector; and the salaries so fixed and apportioned to each collector, shall be paid by the respective treasurers of such town, city or school district, at such times as the respective authorities fixing the same shall direct; but said selectmen, court of common council, and board of education, may, by concurrent action, allow a less sum than three thousand dollars, as the aggregate yearly compensation for all of such collectors, in which case the salary of each collector shall be fixed in proportion to such less sum under the same rule, and in the same manner as herein provided for a larger sum.

Sec. 124. The provisions in chapter 2d of this act, for the collection of taxes, shall not apply to or affect any of the provisions of this chapter, relative to the time, mode of payment or collection of the taxes for which in this chapter other provisions are made.

Sec. 125. The following form may be used for a warrant for the collection of taxes, viz:

To [A. B.] collector of the [town, city, society or other community, as the case may be] in the county of [ ] Greeting:

By authority of the State of Connecticut, you are hereby commanded forthwith to levy and collect of each of the persons named in the annexed list, herewith committed to you, his several proportion of the sum total of said list, as therein stated, being a tax or assessment agreed upon by the inhabitants of said [town, city, society, or other community, as the case may be], regularly assembled on the —— day of ——— A. D. ——, for [here state the purpose for which the tax was laid]. And you are to pay the sums which you shall so levy and collect, to the treasurer of said [town, or to C. D., the person appointed to receive the same], on or before the —— day of ———, A. D. ——. And if any person shall neglect to make payment of the sum at which he is assessed and set in said list, you are to distrain the goods or chattels or lands of such person, and dispose of the same as the law directs; and after satisfying said tax, and the charges, you are to return the overplus, if any, to said person; and for want of goods and chattels, or lands on which to make distress, you are to take the body of the person so neglecting, and him commit unto the keeper of the jail of said county, within the prison, who is hereby commanded him to receive and safely keep, until he shall pay the said sum, together with your fees.

Dated at ———, this ——— day of ———, A. D.

A. B., Justice of the Peace.

SEC. 126. Words in this act, importing the singular number, may be applied to persons or things in the plural number; words importing the plural number may include the singular; words importing the masculine gender, shall include the feminine; and words giving a joint authority to three or more public officers or other persons, shall be held as giving such authority to a majority of such officers or persons. The word "oath" shall include affirmation, and the word "sworn" shall include the word "affirm;" the word "person" may extend to and be applied to companies, corporations and bodies politic; and when any section is referred to as "preceding," "succeeding," or "following," it shall mean the section next preceding or following, unless some other section is expressly or clearly designated in such reference.

SEC. 127. "An Act for the Assessment and Collection of Taxes," title 64 of the General Statutes;

Also, "An Act in addition to" said Act, approved June 22d, A. D. 1866, relative to certain corporations;

Also, "An Act in addition to" said Act, approved June 30th, A. D. 1866, relative to non-residents;

Also, "An Act amending" said Act, approved June 6th, A. D. 1867, relative to State taxes;

Also, "An Act in addition to" said Act, approved June 25th, A. D. 1867, relative to certain deductions;

Also, "An Act in addition to" said Act, approved June 28th, A. D. 1867, relative to certain additions;

Also, "An Act in alteration of" said Act, approved June 28th, A. D. 1867, relative to auctioneers;

Also, "An Act in addition to, and alteration of" said Act, approved June 28th, A. D. 1867, relative to certain monthly additions;

Also, "An Act in addition to" said Act, approved July 27th, A. D. 1867, relating to certain insurance companies;

Also, "An Act in addition to" said Act, approved July 27th, A. D. 1867, relating to poll taxes;

Also, "An Act in addition to" said Act, approved July 27th, A. D. 1867, relating to railroad and horse railroad property;

Also, "An Act in addition to" said Act, approved July 27th, A. D. 1867, relating to blind persons;

Also, "An Act in addition to" said Act, approved July 27th, A. D. 1867, relating to commissioners of equalization;

Also, "An Act relating to Incorporations," approved July 27th, A. D. 1867; and all other acts inconsistent with this act, are hereby severally repealed.

Provided, that such repeal shall not revive any act heretofore by any of said acts repealed; nor affect any right of action accrued, nor any suit now pending; nor any rights, liens, liabilities, offenses, penalties, or forfeitures, accrued, incurred or committed before the passage of this act; nor in any manner affect the laying, collecting, or any proceeding therein, of any tax heretofore laid.

REPORT

OF THE

COMMISSIONERS ON FISHERIES,

TO THE

GENERAL ASSEMBLY,

MAY SESSION, 1868.

NEW HAVEN:
THOMAS J. STAFFORD, STATE PRINTER.

1868.

REPORT.

To His Excellency the Governor and the General Assembly of Connecticut:

The Commissioners appointed by authority of Section 5 of "An Act entitled an Act in addition to 'An Act for encouraging and regulating Fisheries,'" beg leave to submit their report.

The "Act" provides for the appointment of "three Commissioners," who were duly appointed by His Excellency the Governor, but one of the gentlemen declining to serve, the vacancy was not filled, so that the Commission has consisted of only two, which is a much better number for the purpose, and is the same as that adopted by the rest of the New England States, with whom they have to act.

Although the subject under consideration is of vast importance, both as an industrial pursuit and as a means of supplying cheap food to the inhabitants of the State, yet the sphere of action of your Commissioners is at present very limited, for although the "Act" provides that they "shall consider the subject of the introduction, protection and culture of fish in our waters," yet the consideration of the subject should have been attended with some experiments, which your Commissioners have failed to make, through lack of funds which could be applied for that purpose.

With regard to the shad and salmon fisheries, Connecticut in a measure has to wait for the States above, viz: New Hampshire, Vermont and Massachusetts.

The shad, as you are well aware, commence to run up the Connecticut River in March or April to spawn, and the young go down to the sea in September.

At the time of the session of the last Legislature there was being conducted a series of experiments at Holyoke on the artificial propagation of the shad, and perhaps a short account of these experiments will not be uninteresting.

Mr. Seth Green, of Mumford, Monroe Co., New York, probably the largest trout breeder in the United States, came on at his own expense, and under the eyes of the Massachusetts and Connecticut Commissioners made the experiments under consideration.

Mr. Green commenced his experiments about the 1st of July. He first built troughs and divided them into sections, covering the bottom with a small layer of gravel; he then caught some shad and stripped them of their spawn, impregnated them thoroughly and deposited them in the beds thus prepared. With this apparatus he succeeded in hatching only about two per cent. of the ova. This is about the same percentage that the shad hatches naturally. He then obtained a rough box, about the size of a candle-box, and knocked out the bottom and ends, which he replaced with wire gauze, covered with a thin coating of tar. In this box he deposited the spawn, impregnated as before, and anchored the box in the stream, where it would have the full action of the current. In this box he succeeded in hatching about seventy per cent. of the spawn. This, then, was a great success. But Mr. Green was not satisfied, and he then invented another box, upon which he has since obtained a patent, which proved to be *the* thing. This he made by affixing floats, so that the current would strike the bottom of the box at an angle; in this box were placed 10,000 ova, of which all hatched but *seven*, thus making almost a sure thing, this being over ninety-nine per cent.

After having hatched out the young shad, which were about as large as a small pin, the next thing was to let them loose into the river. He supposed that the young, like other fish, sought shallow water for protection, but in this he found himself mistaken. He began with a dipper to take out the fish, but found that as fast as they were put into the water they were taken by the shiners, out of one of which fish he took fifteen young shad. He then built a pound, sufficient to keep out all other fish, and into this he liberated some of the young captives.

After a short time he revisited this pound, and at first could find no fish; after careful inspection he found them all in the deepest water. He then built another pound, extending farther out into the stream, and in this he still found that the shad sought the deep water. He then liberated the rest in the deepest part of the river, there being a large white rock on the bottom, and over this white surface he could see the fish, as it were, perfectly at home, thus proving that young shad go as soon as hatched to deep water for protection, and there they are safe, being too small for the bass, and those fish that would take them being afraid to venture out of shallow water for fear of that fish. Thus the bass becomes, as it were, the best protector of the young shad.

Mr. Green, in the three weeks he remained at Holyoke, succeeded in putting into the Connecticut River, in good condition, about forty million (40,000,000) shad, hatched artificially, and in the meantime he had to study out all the peculiarities of that fish.

Although Mr. Green is of opinion that his experiments were conducted on too limited a scale to be noticed in the river, yet he thinks that with a small outlay and proper legislation shad may be made so plenty in the Connecticut that they can be sold for manure, and still be a source of tenfold more revenue to those engaged in their capture than they are at present. And in this connection we would say that last Fall it was generally remarked that more young shad were observed on their way to the sea than had been the case before for a number of years. Nor was this confined to any one locality. Mr. Henry Miller, of Glastenbury, informs us that in that town it was the subject of especial remark. At Middletown, when young shad were going to the sea, they were using their small ferryboat, and it was no uncommon thing for them to scoop up the young fish in the apron of the boat. In the town of Haddam, on the 28th of September, Mr. Isaac Arnold and Mr. David Russell were fishing with a fine mesh net for small fish, and saw thousands of young shad, of which they caught a few. Those that they caught the steamboat washed against their net and scaled, which of course killed them.

Of the habits of the shad very little is known. Even the course of the run is not as yet settled, some claiming that the fish leave their native waters in the Fall and proceed in one vast army south along the coast, and winter in the Gulf of Mexico. Others adopt the theory of Prof. Agassiz, viz: that shad go into deep water and lie off the mouths of the rivers until the water becomes warm with returning Spring, or they are prompted by the great law of propagation to seek their native spawning beds.

Shad commence to run up the rivers of the South at a much earlier date than is the case in the rivers of the North, and there are fishermen in this State who regularly follow the run of shad in the different rivers along our coast.

Mr. Joseph Clinton, of Old Saybrook, has followed this course for seventeen (17) years. He generally commences fishing in the St. Mary's River, in Florida, and fishes north until he arrives at the Connecticut, where he ends his fishing for the season. He mentions one singular fact in connection with this subject, and one that is not generally known, viz: that no female shad are found in the St. Mary's, although the male fish are taken there in paying quantities. If this is a *fact*, the question here arises, why does the male shad make this solitary migration? This, like a great many other questions with regard to the habits of this fish, your Commissioners are unable to answer, and must leave it to further investigation.

The food of the shad is a disputed point, some claiming that he feeds on the animalcules contained in the water, others that he subsists without food, and others still that he takes baits of different kinds in different seasons. The chief food of the shad while in the sea is a minute species of marine insect known to fishermen as "sea fleas," and it is no uncommon thing to take them at the mouths of our rivers, their stomachs crammed with this food.

Mr. S. Green is of the opinion that the time will soon come when the shad will be numbered among the "game fish," and will be taken with the fly. Frank Forrester was of the same opinion. In his "Fish and Fishing," page 181, he says: "From personal experience and success I can assure the fly-fisher that he will find much sport in fishing for the shad during his upward run in the Spring, with a powerful trout-rod, a long line, and such flies as he will procure in perfection at Conroy's, in Fulton street, New York."

Norris, in the "American Anglers' Book," page 178, in alluding to the above quotation from Forrester, says: "It is not a predatory fish, and it is to be feared that his impression or hope of its being classed among game fish at some future day will never be realized, although there have been rare instances in which it has been taken with a fly, and occasionally with a small silver minnow. I was fortunate enough to hook three in succession, when fishing for perch with a bright little minnow below Fairmount Dam, and secured two, the third being lost for want of a landing net, for the mouth is extremely delicate. They have also been taken, though rarely, with shad-roe. A friend of the writer, a novice in angling, some ten or twelve years ago went to Fairmount, and in the course of a morning's fishing caught three with this bait." This may have been true of the shad in olden times, but they have learned better since, and we can assure the people of this State that, if they want any sport angling, they had better go in search of some other variety of fish.

Since the above report was written your Commissioners have visited some of the fisheries on the Thames River, where the shad used to be caught in large numbers, but now the fishing has dwindled to comparatively nothing. Your Commissioners would therefore recommend the consideration of the subject, to see what may be done for the restocking of the Thames and Housatonic.

Next in value to the shad comes the "alewife." This hardy little fish has not suffered as much as the shad, which fish he precedes into our rivers about ten days; and with suitable fishways and the observance of the fishing laws we have not much fear of a great falling off in its numbers.

THE STRIPED BASS, OR ROCK FISH.

This noble fish is found in all our rivers that empty into the sea. The generally received opinion is, that the bass ascend our rivers for the purpose of feeding upon the ova of the shad and alewife, but this is undoubtedly incorrect, for it matters not at what time the river breaks up, whether in mid-Winter or Spring, a sweep of the seine is almost sure to capture some of these fish; but those taken in Winter almost invariably have the *vent closed*, thus showing that they have not fed, and have lain in a semi-torpid state during the cold weather, and had only commenced to run when the mild weather had removed the ice.*

I think it safe to say that although the striped bass goes to the sea and lives some time in salt water, yet there is not a month in the year but what he can be found in our rivers.

Striped bass are sometimes taken in immense numbers in the Connecticut, varying in weight from one to eighty pounds. A fisherman of undoubted veracity informs me that twenty-four years ago last March he caught, with the assistance of one man and a boy, 4,500 pounds of striped bass with four hauls of the seine. In the month of April of the present year a fisherman caught in Salmon River, in the town of East Haddam, over 1,000 pounds of bass in one day.

The restoration of salmon to the Connecticut and other rivers has been attended with some trouble and delay, but it is likely to be accomplished at an early day. The salmon spawns in the fall, and the young hatch during the winter: they are then called par, in which state they remain one year;

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*The fishermen of the Thames River, where the principal fishery is for striped bass, say that this fish always winter in that river, and that when the water is frozen they are always torpid. Mr. Church, a fisherman at "Missopauge" informs me that on the 20th of last November he hooked a bass, which he lost, and with him his hook and part of his line. This Spring he caught the same fish near the spot in a seine, with the hook and line protruding from his mouth; the hook and line he recognized as his own. The bass was lively, but poor in flesh; its tongue was chafed considerably by the hook.

they then take upon themselves scales, and are called smolts, in which condition they are ready to go to the sea. Last Winter, the Commissioners of New Hampshire and Massachusetts obtained a large number of salmon ova through Dr. Fletcher. These were most of them placed in the ponds of Dr. Livingston Stone, of Charleston, and Mr. J. S. Robinson, Meredith, N. H., where from 20,000 to 25,000 of them have hatched, and if all goes well, they will be ready to go to the sea next Spring.

The fishways over the dam at Holyoke and Turner's Falls have not yet been commenced; and although the building of the one at Holyoke will be the cause of some litigation, yet the work will be commenced at once and completed the present season, so that next Spring there will be no obstruction to prevent the migration of the young salmon to the sea.

Next in importance to the rivers, your Commissioners have been led to consider what fish are the best for restocking the numerous ponds and small streams that abound throughout the State. Of all probably the best and most prolific is

THE TROUT.

With regard to the habits of this fish, we copy from the Maine Report, page 17:

"The habits of the trout resemble those of the salmon. It spawns in running water, burying its egg in the sand or gravel, in the Fall of the year. The term of incubation is very long —not less than one hundred and sixty days in our natural streams—so that the young trout do not make their appearance until Spring. The trout does, however, sometimes spawn on the shores of lakes, on sandy and gravelly bars, as has been observed in Great Pond in Belgrade and Rome, and the Cobbossee Contee, where Dr. Cochrane, of Winthrop, has seen them spawning. What success attends the deposit of eggs in such a situation is uncertain, but doubtless fewer of them hatch than would be the case in running streams; and in a great portion of our lakes the bottom is too foul to admit of success. We shall find on the whole that trout never maintain their number in places where they are debarred from spawning in running water. There is in Sidney a small lake, called Silver Lake, of beautiful emerald water, of great depth, with clear, sandy, and stony shores, with neither outlet nor inlet. Into this were put a small number of trout. They all attained a large size, and were caught a few years afterward. The whole number taken out did not exceed the number put in, and since those were taken no trout have ever been seen in the lake. It is not supposed that they bred at all. The same experiment was tried in a similar pond in Moscow, with the same result. In connection with these we may mention an experiment that resulted very differently. Major S. Dill, of Philips, writes to the Maine Farmer: 'In the Fall of 1850, I put in the Sandy river ponds ten or twelve trout; for seven or eight years no indications of them were to be seen, notwithstanding thousands of people crossed those ponds every year. Since 1857, it is judged that not less than two thousand pounds have been taken out annually. So far as I have been able to inform myself, never a fish had been seen in either of those ponds prior to my *colonization.*' We presume these trout had access to running water in which to breed. In general, they spawn in streams of all sizes. In the rivers tributary to the Umbagog and neighboring lakes, they are seen in great numbers in the Fall, busily engaged in depositing their eggs in the gravel, surrounded frequently by swarms of small fishes, greedily watching for a chance to steal the eggs. While the female is depositing them, the male lies apart, occasionally making a dash amongst the little poachers. When engaged in spawning, trout are so intently occupied that they seem to have entirely lost their habitual shyness, and are therefore easily captured. They will frequently take the fly, but by no means so readily as at any other season. They are chiefly captured at this season by means of spears and grapnels, which are very deadly weapons. In small brooks they can even be taken out with the hand. There is a brook running through the village of Manchester Forks, where each year quite a number of trout, weighing from two to four pounds, are taken as they come up to spawn. A pair has sometimes been seen together in the brook, and frightened under the bank, where it was only necessary to reach the hand under and take them unresistingly out. Trout, like salmon, are very poor in quality at the spawning season, and it is surprising that people can eat them. Yet we presume that more of them are taken then than in any other part of the year."

Trout breeding is extensively and profitably carried on in many parts of the country. One of your Commissioners has visited during the Winter the breeding ponds of Mr. Seth Green, in the State of New York, and as there are many persons in this State beginning to engage in this business, a short description of his ponds and fixtures will not be out of place. Mr. Green has five ponds in all, situated on a large creek, which rises about three miles from his house, and is fed by springs. The water during the winter stands at a temperature of about 46°, and is one of the most favorable places in the country for the business in which he is engaged. In these ponds he keeps his fish of different ages separate, so that there is no chance for the large fish to eat up the smaller ones. Above his breeding ponds he has a covered way with gravelly bottom. When the fish are ripe they pair, and ascend these places to spawn, so that by putting a net across the mouth and lifting the covers he captures those only that are ready to spawn. These he strips, both the male and female, replaces them in the pond, and conveys the ova to the hatching house and deposits it on the bed. The hatching house is a rough structure, containing six troughs, each twenty-four feet long and eighteen inches wide, divided by partitions about eighteen inches apart, with a stream of water constantly running over them. This water all comes through a half-inch hole, with a three inch head. Here the eggs are left to hatch, which they do in about ninety days. As soon as the sac is absorbed, which takes about forty days, the young trout have to be fed; this is done with liver scraped with a sharp knife to the consistency of blood. After a short time they are removed to their several ponds, and cared for until they become breeders in turn, or sold to gentlemen for the purpose of stocking ponds and streams.

Some idea of the profits arising from aquaculture may be formed from the fact that Mr. Green devotes his time to this business, and employs the assistance of one man. His whole establishment does not occupy more than one or one and one half acres, yet in February of the present year he had sold more than nine thousand dollars worth of ova alone, and had not commenced to fill his orders for young trout. He sells the impregnated spawn for $10 per thousand, or $8 per thousand in quantities of five thousand or over, which he delivers from November 1st to March 1st: the young trout $30 per thousand at his place, or $40 delivered at the express office nearest to the purchaser.

A gentleman in Middletown obtained of Mr. Green in February five thousand spawn, which he placed in a hatching box in his cellar, with a stream of water running through it from the city water-works. Although the temperature of the water was as low as 38°, the spawn have hatched finely, and the young trout are doing well.

THE BLACK BASS, (GRISTIS NIGRICANS,) "AGASSIZ."

This is one of the best of our fresh water fishes. It spawns in May, and is very prolific. It is an excellent pan-fish, is captured with worms, minnows, fly, and spawn, and affords rare sport, besides being a very valuable fish for food.

Of the three following varieties we copy from the Report of the Maine Commissioners:

SEBAGO SALMON, (p. 13.)

"The term 'land-locked salmon,' as used in the resolve authorizing this Commission, has been understood as applying to this variety, also to the fish caught in the Schoodic waters at Grand Lake. The belief was that these were mere varities of the true sea salmon, *salmo salar*, which had in some way lost the instincts which prompts that species to seek the sea, and thus remaining constantly in the fresh water were 'land-locked.' Knowing, however, that ichthyologists are not all agreed on this question, and appreciating the importance of caution in announcing opinions on a question of science, we prefer for the present to designate these varities as *Sebago* and *Shoodic* salmon, being sure that the term *salmon* is properly applied to them, as distinguishing them from *trout*, and leaving it for some competent authority to make such a careful comparison between them and the *salmo salar* as shall settle the question of their identity or diversity. If, however, it be decided that these are not identical, then we know of no salmon to which the term *land-locked* can properly apply; for it seems to imply that a sort of imprisonment has taken place—that a species accustomed to visit the sea has been shut up in the fresh water until it has lost its original instincts, and become a purely fresh water fish.

"The sebago salmon, however, is none the less valuable in case it does lose its claim to such noble parentage. Its flesh is as sweet, and its game qualities as great in either case. This species was once quite abundant in the waters connected with Sebago Lake; but torch and spear and exclusion from the spawning grounds have made great inroads on their numbers. Probably not more than a thousand of them are now taken annually. Nathan Cummings, Esq., of Portland, has given us much information about these fish. He says that when the Cumberland and Oxford Canal was building, during the first Winter the workmen sent away fifty barrels of them. Mr. Cummings used to fish for them very successfully at the outlet of Sebago Lake, but for some years he has tried them there to no purpose. They are still brought in limited numbers into Portland each Spring and Fall, mostly from the lower parts of Crooked and Songo Rivers.

"The principal breeding grounds of this salmon at the present time are on Crooked River, below Edes Falls, in the town of Naples, and in Bearbrook, at the head of Long Pond, near Harrison village. They make their first appearance in the direction of their spawning beds about the first of September; in Crooked River a little earlier than in Bearbrook. In the latter stream the males come first alone, and run back and forth in the mouth of the brook until the last of the month, when they are joined by a few females, but there are still very few until the 15th of October. Soon after this date they begin to ascend the rapids to spawn. It is not often, however, that any of them are mature and commence spawning until the 20th. They come then in considerable numbers, and soon finish spawning. Very few are found in the brook as late as November 14th, although probably they sometimes spawn later. Crooked River is a larger stream, and they report different habits in some respects. The very first that come into the stream are males, but after that the females seem to head the advance, and the males follow them ; taking the whole of September, the males are not more numerous than the other sex. In the whole season there are more males. They sometimes continue to spawn very late. The state of the water has a great influence on their motions at this time. A rise is followed by a plentiful run of fish.

" Their beds are made in the gravel where the current is rapid, but just on the verge of a ripple in the water; rarely seen on the lower side of a ripple. They make large excavations, the sand and gravel from which are carried out by the current, and form a mound below. These excavations are sometimes three feet in diameter, and are made by more than one pair. A large number of both sexes are sometimes seen together in one hole. No fighting is observed amongst the males. It is more common, however, to see a single pair working together, lying side by side in the nest. They make the excavations by fanning with the tail, no digging with the head being observed. On favorite grounds the nests encroach on each other on all sides, frequently lying one above another like a row of potato hills ; but whether one pair makes more than one nest has not been ascertained. The work of spawning is carried on at night, and by day the fish are rarely to be seen on the beds. Their ascent of the stream also occurs by night. The old fish eat nothing during this season ; but small males are taken with their stomachs full of eggs. The adult males are very different in appearance from the other sex, being much deeper and thinner, with larger and more pointed heads. The lower jaw is furnished at the spawning season with a singular recurved process, sometimes near an inch in length, which shuts into the roof of the mouth ; it is conical in form, either truncated or with the apex bent backward. On an adult male of one pound weight this was present, but not so fully developed as in the larger specimens. In younger individuals it was wanting. Both jaws in this sex are so curved as to prevent the closing of the mouth. A male of six inches length had a forked tail, eight or nine black bars across the side, twelve large vermillion spots on the side. One that measured eight and one half inches in length has the same forked tail, and the bars on the side, but they are very faint, and the vermillion spots have changed to maroon; the hook on the jaw not yet visible.

"The spawning grounds of this species are very limited. Those of Long Pond are confined to Bearbrook. Those of Sebago are mostly limited to two or three miles of Crooked River. In former times they ranged at the spawning season the whole length of Crooked River, as far at least, as North Waterford, and great numbers of them were taken at many points; but they were never known to ascend the river at any other season than fall, farther than the first gentle rapids near its mouth. This is rather singular; for the Sea Salmon (*S. Salar*) ascends rivers of smaller size than this in June, and passes the summer in them. The grand fishing place in May was from the junction of Crooked and Songo River several miles down. The fish took bait eagerly, and were then in superior condition. They left this ground as early as the last of May, but at the outlet they were taken much later. In the lake itself they were only caught in the track of the rafts that came down across the lake into Presumpscot River, and the arrival of the rafts at the outlet was always the signal for good fishing there. In Long Pond they are never caught—only when entering the brook, and in the spring only a few small ones are taken there.

"The size attained by the Sebago Salmon is very considerable. The average of those taken in the Fall is for the males five pounds, for the females a little more than three. A female twenty-five inches long weighs five pounds; a male of the same length weighs seven pounds. Of two males twenty-five inches long, one weighed nine pounds fourteen ounces, the other eleven pounds four ounces. Some extreme weights may be given. One was taken the past season at Edes Falls that dressed fourteen and a half pounds. The largest on record was caught by Mr. Sawyer of Raymond. Its weight was seventeen and a half pounds, and is vouched for by Franklin Sawyer, Esq. of Portland. These old fish are seldom caught with the hook; and of those taken in the Spring and Summer when they are in season, the average weight would be less than indicated by the above.

"These fish are said to be about as plenty as they were ten years ago. But it is strange that they can maintain their numbers against such persecutions as follows them. The spear is very fatal. In Bearbrook nearly all the breeding males are destroyed before the females are ready to spawn. In 1858 a law was passed for their protection, which would enable them to recruit their numbers, were it enforced.

"We consider this variety worthy of being propagated and disseminated through the State."

"TOQUE." (Maine Report, p. 19.)

(*Salmo Toma*, Hamlin.)

"This species is in many localities known as 'lake trout,' a name which indicates the characteristic which most distinguishes it from the brook trout. It is found in lakes of considerable depth, rarely in rivers, and spawns habitually in still water on rocky shores and bars. Although it occasionally takes the fly of the sportsman, it so generally inhabits deep water, that its presence in the Trunk Lakes in Hancock County was unsuspected for many years after the neighboring country was occupied. It is scattered all over the State, except in the Southwestern counties, where Thompson's pond in Poland is the only locality that we have learned. It does not occur in the Umbagog system, nor in the lakes of Kennebec County. But in the Lakes of the Upper Kennebec, of the Penobscot, of the St. John and of the St. Croix, it is common. It varies greatly in color, being in Grand Lake on St. Croix of a lively salmon yellow on the sides, dotted thickly with grey, with open spots showing the clear yellow ground work; and in Emden Pond, although revealing the same markings to a close observer, yet presenting an almost uniform grey over all the lower part of the body. A Salmo found in town of Wilton, has been supposed to be a distinct species, but it has in general appearance a close resemblance to the togue as caught in Grand Lake, and a careful comparison will probably reveal no specific differences.

"The spawning time of the togue is the Fall of the year. Late in October they resort to shoal water and spawn on rocks and ledges. They come suddenly, finish the operation in a few nights, and immediately retire to deep water. It has been noticed that the females come to the spawning grounds first. The first night of their appearance nearly all will be females, and at the last nearly all males. They are accompanied and followed by a motley throng, composed of nearly all kinds of fishes in the lake, eels and hornpouts predominating. Probably few of the eggs escape them.

"The quality of this fish is generally inferior to that of the trout. Its flesh lacks the delicate flavor. It is very fat, but not rich in taste; yet, when in season, it is very good eating. It attains a great size, individuals having been found to weigh twenty-seven pounds, and ten pounds not being uncommon. In Wilson Pond, in Wilton, those weighing only two pounds are looked upon as curiosities, and the average is eight pounds. In other waters the average is much less.

"On the St. John waters this fish is an important article of food with the inhabitants, less abundant than the whitefish, but said to be preferred on account of superior size.

"Besides the name of 'lake trout,' that of 'tuladi' belongs to the same fish, and the 'lunge' of Vermont and Canada is believed to be identical with our togue."

WHITEFISH. (Maine report, page 21.)

(*Coregonus.*)

"Of this genus we possess at least one, and probably more than one, species. They occur principally in the central, northern, and eastern portions of the State. The species found abundantly on the St. John and its tributaries has been referred to the species *C. albus*, but we doubt whether that is correct. Whether or not our whitefish is identical with the famous whitefish of the great lakes, it certainly partakes of that excellence which is a characteristic of all the members of the genus. In the Fish River region, in Moosehead Lake, in Schoodic Grand, they pronounce the whitefish the best of the fishes. Like nearly all the salmon family, to which they belong, they spawn in the Autumn, and seem to prefer running water. On the Schoodic they resort to Pocumpus Thoroughfare, a strait about six rods long, connecting Pocumpus and Grand Lakes, where the water is flowing from three to five feet deep, and the bottom sandy and gravelly. In November each year small quantities of them are taken here with the spear. One night Mr. B. W. French, of Calais, set a net thirty feet long at this thoroughfare, and in the morning had a barrel of whitefish. In Moosehead Lake they sometimes take the fly. In June last we saw one taken with the fly near Mt. Kineo, by Artemas Libby, Esq., of Augusta. It weighed a pound and a half. Two trout, weighing a pound each, were taken at the same cast. They can be taken with the hook at any season of the year, in deep water. Almost any bait will answer, but the best is a piece of a small fish. The most of them are taken in the Winter. The greatest success is attained by sinking through a hole in the ice, at the end of a line, a "cusk," thoroughly gashed up with a knife. This remains there one day, and tolls a great many whitefish around. They are then taken by the smallest baits, on small hooks. One Winter many of these Moosehead whitefish were sold in Augusta, and their weight was so uniformly one pound that they received the name of 'poundfish,' and the trouble of weighing was dispensed with by the mutual consent of seller and buyer.

"The whitefish differs from most of its family in being nearly or quite destitute of teeth. Its mouth is small and tender. It has therefore none of the fierce predatory character of the trout and togue. It probably feeds mostly on small aquatic animals of various kinds, such as insects, crustaceans and mollusks, being guiltless of the death of any of its fellow fishes."

THE PICKEREL.

This fish is found in all our ponds and rivers. Its value as an article of food is a much disputed question, but, as he usually destroys several times his weight in more valuable fish every year, the sooner he is driven from our waters the better it will be for the fishing interest of the State.

Having considered the different kinds of fish, let us inquire into the causes of their decrease in numbers and size, which to try and help remedy your Commissioners were appointed.

The principal causes are:

First, Impassable dams;

Second, Over-fishing;

Third, Fishing in improper seasons.

In the opinion of your Commissioners the first is the principal cause of the decrease in numbers and size of the shad and the extinction of salmon in the Connecticut, for it is an undisputed fact that salmon were plenty in this river until after dams were built, and after that time a few ascended the river, but the main army deserted entirely. With the shad it is different, for, owing to his nature, he breeds in still water, and therefore has found good spawning beds below the dams; but that those are not the best spawning beds for the fish his deterioration in size, if nothing more, tends to show.

Pollution of water, arising from mills and gas-works, was thought at one time to be a great cause of decreasing the number of fish, but this is not true to any extent, for a person unacquainted with the subject would be surprised to see how soon water will purify itself from matter of this kind. Chemical changes take place so rapidly that water flows but a very short distance before no difference can be detected even by chemical analysis.

There is located on Sumner Creek, in the town of Middletown, the dye-house of the Russell Manufacturing Co., and in the pond that receives the drainage of this dye-house we have seen the water a deep rich brown; yet fish live and are caught in this pond, and in the pond below, only about one hundred rods, the water is clear and fish are abundant. So the same stream receives the drainage of the city gasworks, which so affects the water that boats lying in the stream will have their sides and bottom coated with coal tar, yet where this drain empties perch and pickerel are caught as plentifully as in any other part of the stream.

Although the wheels at Windsor Locks have been thought to destroy many fish, yet in the opinion of your Commissioners this is not correct. Though they were not fortunate enough to be there at the time of the downward run of shad, yet they have examined the place and made due inquiry, and have come to the conclusion that the great bulk of young shad follow the main course of the river, and that but few pass through the locks.

The next question is, "How to remedy these evils?"

We would answer:

First, By building fishways over the dams;

Second, By artificial culture;

Third, By legislation.

We will now see how far we have advanced in this subject. With regard to the fishways over the dams we will quote from the report of the Massachusetts Commissioners, who have the work in charge:

(Massachusetts Report, page 5.)

"The great Hadley Falls Dam, on the Connecticut, still remains unbridged, to the regret of all persons interested in the restocking of this fine river. The last Legislature, apparently assuming, what nobody had any ground to assume, that the Hadley Falls Company would be ready, and were bound to build a pass over their dam, made no direct appropriations for this structure. It is true that the $10,000 actually voted for restocking rivers and ponds might, in part, be applied to making a fishway, under the plea that this was among "appliances and structures useful for the passage of the fish." But, then, this sum would not be enough. In their report of last year (page 3) the Commissioners stated that $10,000 was a minimum estimate for this fishway, and subsequent examinations have tended to raise this estimate to $12,000 at the lowest and to $17,000 at the highest. It was further implied that the Hadley Falls Company considered themselves exempt from any liability in the premises. If the company has the law, it only remains to be said that one of our Legislatures has put this Commonwealth in a position to be thwarted by a water-power company whenever the Commonwealth should seek to render an act of simple justice to the States of New Hampshire and Vermont, by giving free passage to the migratory fish of the Connecticut River. It is true that several lawyers of reputation have given the informal opinion that this company *was* liable to build a fishway, but the testing of such a question would involve legal delays, and the shad would be the sufferers. Moved by these considerations, the Commissioners endeavored to make a compromise, whereby the company should bear only a small part of the first cost, but should continue its interest in the structure by undertaking a portion of the expense of keeping it in repair. This overture was met by a flat refusal, accompanied by a hint at damages in case the State should put up a fishway. Waiving for the moment any rights in the case, the Commissioners then ordered the immediate construction of as much of the fishway as their money would pay for; but even this beginning was found impracticable, on account of the unusually high water, which would have made expensive coffer-dams essential. Nor does the evil rest here, for the company at Turner's Falls, also relying on the condition in their Act, (Chapter 275, Section 4, Acts of 1866,) displayed a *solers cunctatio*, and wisely regarded the Holyoke Dam as a good shield between themselves and the enemy. These delays, be they right or wrong, on the part of private corporations, are the more to be regretted, because the State has shown the utmost activity and good faith in trying to repair any injuries to fisheries, whether at home or abroad; and it is proper to add that on the Merrimack River the companies have shown a large spirit, and have been ready to go beyond what the law absolutely required of them."

The next remedy is, "*Artificial Culture.*"

The experiments of Green at Holyoke show conclusively that shad can be bred as easily as sheep, and that the *young* can be multiplied to almost any extent. If this is true, and it certainly will admit of no doubt to any reasoning mind, it should be our duty, in the words of Col. Lyman, of Massachusetts, to "sow fish as you would sow corn." We should select a few practical men, provide them with hatching boxes, and station them at some of the principal fish places along the river, and as the fish are taken, let them strip the spawn from the females and impregnate them from the males, hatch them in the boxes and turn them into the river, thereby bringing young fish from millions of spawn that would otherwise be a total waste.

Of these young fish thus hatched as large a percentage would come to maturity as of those hatched naturally, and we have here the advantage of hatching ninety from the same number of ova from which the shad in the natural way would hatch two, so that here we have, with a small outlay, almost unlimited facilities for reproducing these fish.*

The next thing is, "*Legislation.*"

Of this we want but little, but we want that little to bear equally on all classes of fishermen.

Some legislation is eminently proper, even if it would not eventually be of any advantage to us; yet it is no more than right that we should allow fish to pass into the waters of the States above, who are spending so much money for the improvement of the fisheries in our river, of which we naturally receive the "lion's share."

The law passed at the last session of the Legislature is considered by the "dragmen" to be very unjust, and your Commissioners think not without reason. The law provides, (Public Acts, Section 1, page 125,) "No person shall take from the Connecticut River any shad at any other time than between the 15th day of March and the 15th day of June in each year; and no person shall set or draw any net or seine for the purpose of taking fish in said river at any other time than between the rising of the sun on Monday morning and the setting of the sun on Saturday evening of each week; and every person who shall at any other time take any shad, or set or draw any net or seine in said river, or aid or assist therein, shall forfeit the sum of One Hundred Dollars to the Treasury of the State; *provided*, that nothing in this section shall apply to taking of fish by order of the Commissioners, for the purpose of artificial or natural propagation of the same."

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* "The Commissioners intend, if possible, to make experiments next summer on a large scale, both in the Connecticut and Merrimack Rivers. If seconded by the authorities of Connecticut, there is no reason why the fisheries, within two or three years, should not be a good deal augmented. Once show the fishermen that shad are increasing, and salmon are coming in, and they may be relied on to support measures which they now regard with excusable indifference or incredulity. All new things are hard of introduction. When the fishway at Lowell was building, some of the factory superintendents (very intelligent men about factories) said, that the fish must have a schoolmaster to teach them to go up those steps! The next year shad and salmon did go up, and without any schoolmaster. The nearer we get to the truth, the more it stands out, that artificial propagation and free passage over dams, are the two great conditions of restocking rivers."—*Massachusetts Report,* page 17.

This law bears more severely upon the drag nets than upon any other class of fishing engines, for while the "dragman" (except during freshet) can only fish nights, the "seinemen" can fish every day except Sunday, and the pounds, the most destructive of all, have no restriction whatever.

Now we will consider the case at low water. The dragman fishes in the night, (for the shad see the net in the daytime and avoid it.) He can only fish at "slack water," which usually occurs twice each night, and lasts one hour each time. He commences fishing Monday night and ends on Friday night, which only leaves him *ten* hours in the week for his occupation. The seineman commences Monday morning, and fishes ten hours per day for six days, making *sixty* hours per week.

The pounds are fishing twenty-four hours per day for seven days in the week, making *one hundred and sixty-eight* hours each week.

We cannot wonder that there is complaint of the law, but as we cannot regulate tides we would recommend an equal number of days and nights for all classes of fishermen.*

The number of the trout is constantly diminishing. This is in a great measure owing to over-fishing and fishing out of season; therefore your Commissioners would call especial attention to the laws on that subject, and recommend to each town in the State a strict enforcement of the statute.

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* "The different classes of fishermen, and the different modes of fishing, have been considered at some length, in order to show that *laws alone* will scarcely provide for a great increase of our valuable fishes, and this because there is a greater or less opposition and rivalry among those classes, which breaks up unanimity of *protection*, while the effect of their combined action is unanimity of *destruction*. That good laws will be a wholesome check there can be no doubt, but they alone will not suffice to make our rivers and ponds a sure source of abundant food, in the same sense that our pastures are so."—*Massachusetts Report, page* 13.

Three years ago last August New Hampshire prohibited the taking of trout in spawning time on Lake Winnepisseogee, since which time the fish have increased very rapidly.

Of the different varieties of fish considered for stocking the ponds of the State, your Commissioners have deemed but few worthy of mention. For some localities, where the water is suited to their habits, the trout, togue, whitefish and Sebago salmon might be introduced to advantage, but for most of our ponds the black bass is undoubtedly the best fish that could be introduced, for the reason that in almost all of them are found perch and pickerel. The black bass is capable of holding his own against both of these fish, and is much more valuable as an article of food than either. He is now found in Shuttle Meadow Pond, in New Britain; Saltonstall Lake, near New Haven; Winsted Pond, in Winchester, and East Hampton Pond, in Chatham. In the last-named pond there were put seventy black bass three years ago. Last year Mr. Buell informs us that there were taken from the pond over two hundred and fifty bass, and that there are as many more in the pond.

One good feature of this fish is, that he will not bite in Winter, and therefore escapes the most destructive mode of fishing with hook and line, viz, "through the ice."

In conclusion, your Commissioners would recommend:

First, That the number of Commissioners be reduced to two, thus putting them on a level with the rest of the New England States.

Second, That an appropriation be made, not to exceed $5,000, for the purpose of restocking our waters with fish.

Third, That the law passed at the last session be amended to bear equally on all classes of fishermen, including pounds.

Fourth, That the Selectmen of the different towns along the river be empowered to appoint, and fix the compensation of Fish Wardens, whose duty it shall be to see that the law is carried into effect.

H. WOODWARD, } *Commissioners.*
JAMES RANKIN, }

APPENDIX.

An Act in addition to "An Act Encouraging and Regulating Fisheries."

Be it enacted by the Senate and House of Representatives, in General Assembly convened:

SECTION 1. No person shall take from the Connecticut River any shad at any other time than between the fifteenth day of March and the fifteenth day of June in each year; and no person shall set or draw any net or seine, for the purpose of taking fish in said river, at any other time than between the rising of the sun on Monday morning, and the setting of the sun on Saturday evening of each week; and every person who shall at any other time, take any shad, or set or draw any net or seine, in said river, or aid or assist therein, shall forfeit the sum of one hundred dollars to the treasury of the state: *provided*, that nothing in this section shall apply to taking of fish by order of the Commissioners for the purpose of artificial or natural propagation of the same.

SEC. 2. No person shall take from the Connecticut river any salmon, before the fifteenth day of March, A. D. 1872, and any person so taking salmon shall pay to the treasurer of the county where such offense is committed, a fine of twenty dollars for fish so taken.

SEC. 3. All complaints for violation of this act, and of the act to which this act is in addition, may be made to the Superior Court by the State's Attorneys of the several counties where the offenses are committed, and where the nuisances exist; and whenever the Superior Court is not in session, such State's Attorney may make complaint to the justice of the peace in any town adjoining the water at the place where such offense is committed, and such attorney shall receive the same fees for services as for trials in Superior Court, which fees shall be taxed as part of the costs of prosecution.

Sec. 4. For the purpose of this act and of all acts regulating and relating to fisheries, the rivers, streams, coves, inlets, and bays and sounds, and all parts thereof, within the jurisdiction of the State, shall be deemed to be entirely in either county and in either town adjoining said waters, at a place where any violation of this act is committed, and the State's Attorneys, sheriffs, and deputy sheriffs of said counties respectively, and the constables and justices of the peace of said towns respectively, shall act in relation thereto, in the same manner as though said river was entirely in the county to which said sheriffs, deputy sheriffs, and State's Attorney belong, or in the town to which said justices of the peace or constables belong.

Sec. 5. The Governor shall appoint three Commissioners, who shall hold office for one year, and until their successors are appointed, and whose duties shall be to make complaints of all violations of the acts relating to fisheries, to the proper informing officer, to consider the subject of the introduction, protection, and culture of fish in our waters, to coöperate with Fish Commissioners of other States, and to make report of such facts and suggestions as may be material to the Legislature.

Sec. 6. Such Commissioners shall receive for their services the sum of three dollars per day, and their actual disbursements while employed in such official duty.

Sec. 7. The limitation of the time of taking shad and salmon in the first and second sections of this act, shall not take place unless the Legislature of Massachusetts at its next session shall prescribe the same limitations to the catching of shad and salmon in said river as are contained in said sections. All parts of the act to which this act is an addition and inconsistent herewith, are hereby repealed.

Approved, July 26th, 1867.

An Act to Regulate Fishing in Connecticut River.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows:

Section 1. Any person who shall take, or who shall aid or assist in taking from the Connecticut River any shad, at any other time than between the fifteenth day of March and the fifteenth day of June in each year, shall forfeit and pay for each offense the sum of one hundred dollars.

Sec. 2. Any person who shall take, or aid, or assist in taking from the Connecticut River any salmon, before the fifteenth day of March, in the year one thousand eight hundred and seventy-two, shall forfeit and pay for each offense the sum of fifty dollars.

Sec. 3. Nothing in this act contained shall apply to the taking of any fish by order of the Fish Commissioners, for the purpose of artificial or natural propagation of the same.

Sec. 4. The mayor and aldermen of any city, and the selectmen of any town, bordering on the Connecticut River, shall appoint and fix the compensation of one or more suitable persons as fish wardens within their respective cities and towns, who shall make complaint of all offenses under this act.

House of Representatives, April 14, 1868.

Passed, to be enacted.

Harvey Jewell, *Speaker*.

In Senate, April 15, 1868.

Passed, to be enacted.

George O. Brastow, *President*.

April 17, 1868.

Approved,

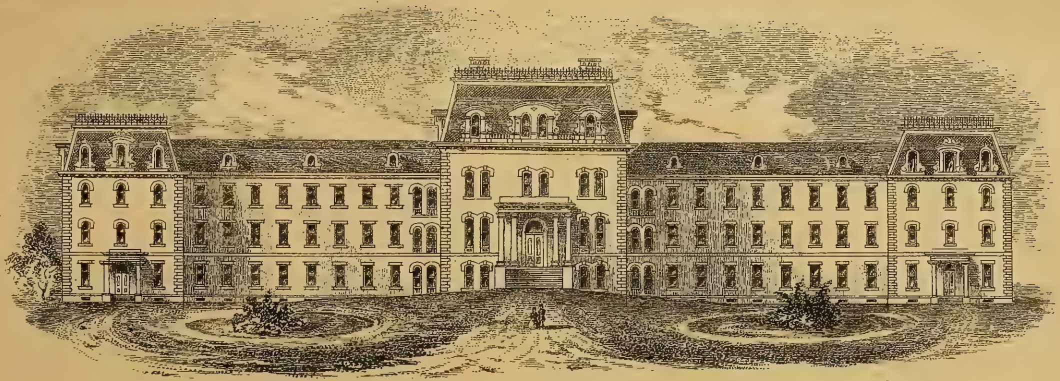
ALEX. H. BULLOCK.

SECRETARY'S DEPARMENT,
BOSTON, April 17, 1868.

A true copy.

Attest,

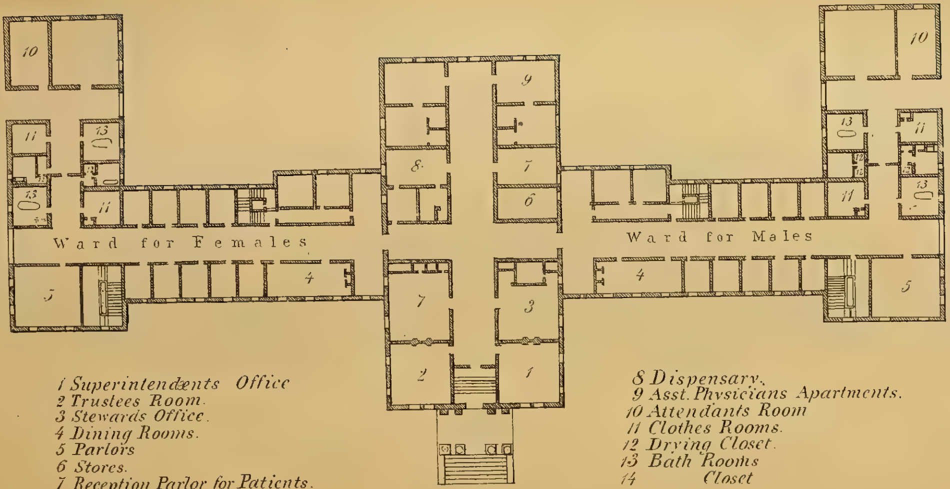
OLIVER WARNER,
Secretary of the Commonwealth.



Punderson & Crisand, New Haven, Ct.

Length 308 feet.

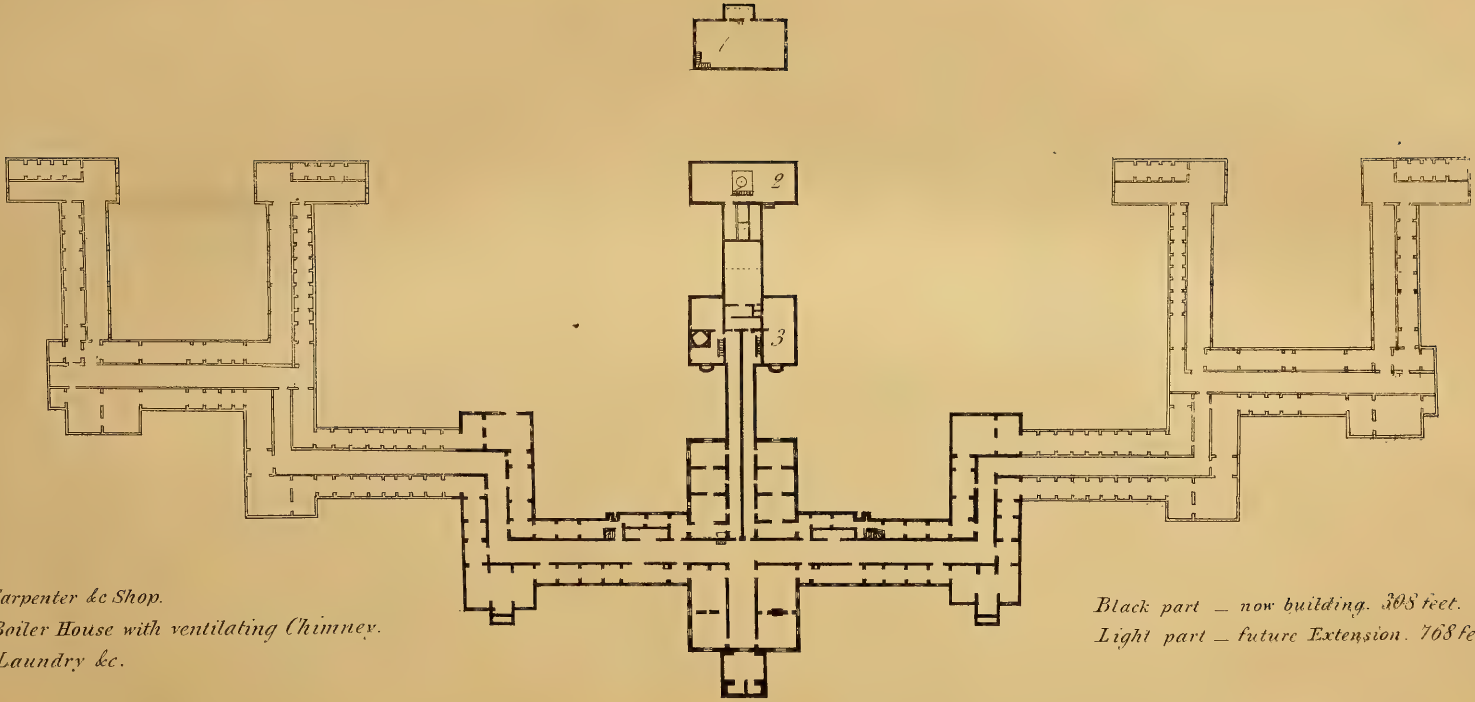
FRONT ELEVATION OF HOSPITAL NOW IN COURSE OF ERECTION
AT
MIDDLETOWN, CONN.



1 Superintendents Office
2 Trustees Room.
3 Stewards Office.
4 Dining Rooms.
5 Parlors
6 Stores.
7 Reception Parlor for Patients.

8 Dispensary.
9 Asst. Physicians Apartments.
10 Attendants Room
11 Clothes Rooms.
12 Drying Closet.
13 Bath Rooms
14 Closet

PRINCIPAL PLAN OF PART OF HOSPITAL, NOW IN COURSE OF ERECTION.



1 Carpenter &c Shop.
2 Boiler House with ventilating Chimney.
3 Laundry &c.

Black part — now building. 308 feet.
Light part — future Extension. 768 feet

CELLAR PLAN OF THE HOSPITAL WHEN COMPLETED.

SECOND ANNUAL REPORT

OF THE

BOARD OF TRUSTEES

OF THE

GENERAL HOSPITAL

FOR THE INSANE,

OF THE

STATE OF CONNECTICUT,

WITH SUPERINTENDENT'S AND TREASURER'S REPORTS,

Presented to the General Assembly, at its Session in May, 1868.

BY ORDER OF THE GENERAL ASSEMBLY.

NEW HAVEN:
THOMAS J. STAFFORD, STATE PRINTER.

1868.

OFFICERS OF THE HOSPITAL.

BOARD OF TRUSTEES:

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S. G. WILLARD,	*Willimantic*
B. W. TOMPKINS,	*Norwich.*
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R. S. FELLOWES,	*New Haven.*
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R. BATTELL,	*Norfolk.*
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J. CUMMINGS,	"

Superintendent and Physician,
ABRAHAM MARVIN SHEW, M. D.

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Steward,
CHAS. W. GALPIN.

Matron,
Mrs. HALLOCK.

Treasurer,
M. B. COPELAND, *Middletown.*

All communications relative to the admission, &c., of patients, should be addressed to the Superintendent. For forms, &c., see pages 33 to 39 of this Report.

REPORT.

To the General Assembly of the State of Connecticut:

The Board of Trustees of the General Hospital for the Insane of this State, beg leave respectfully to report:—that since their first Report to your Honorable Body the highly important work committed to their charge, of erecting and preparing a suitable Hospital for the Insane of this State, has been steadily and zealously pursued.

On the 20th of June last, the corner stone of the Hospital was laid with impressive and appropriate ceremonies, by Governor English, in the presence of the State Officers, members of the Legislature, and a large concourse of deeply interested spectators. Addresses were made by Governor English, Ex-Governor Hawley, Dr. Pliny Earle, of Northampton, Mass., Rev. Dr. Cummings, of Wesleyan University, and Prof. Thacher, of Yale College; and it is believed that not one of that vast assemblage went away dissatisfied with the noble purpose and policy of the State, then and there set forth and proclaimed.

The work has since been vigorously pushed on. The carpenters' shop, laundry, bake-house, kitchen, and boiler-house are completed. The air shaft, so indispensable a portion of the edifice, is finished; and the ventilating flues duly arranged. The south wing and return wing are fully completed and ready for occupancy on the first of May. The main or center building is in an advanced state of forwardness, is roofed and pointed and will soon be finished. Water, of which the supply is ample, of excellent quality and believed to be unfailing, has been brought more than a mile and introduced throughout the building. By an arrangement with the Middletown Gas Company, mains have been laid from the city, and the pipes carried through the building. An engine and boiler, steam heating apparatus and a patent washing-machine have been put in. The bedsteads, bedding and other furniture, sufficient for a hundred patients, have been provided, and we are now ready to receive that number of male patients. The foundation and basement story of the north wing and return wing were also laid last Fall and are waiting for the superstructure.

The buildings are of Portland stone, "laid in broken range work, with hammer-dressed stone for corners, water-tables, window-sills and caps." They are roofed with slate and finished, without and within, in a style which, though severely plain and simple, is yet not devoid of taste and beauty; and the Board of Trustees believe that the Hospital will be regarded as a model of strength, durability, and perfect adaptation to its objects.

The work has been done thoroughly, and yet as economically as possible under the circumstances, and when finished, the edifice will be one of which the State of Connecticut may be justly proud. The early and unusual severity of the past season unavoidably interrupted the work and occasioned great delay, difficulty, and increased expense in its progress; but the Board are satisfied that all those employed upon it, whether as superintendents or operatives, have been faithful in the discharge of their duties, and have, moreover, been animated by a proper and zealous spirit. Dr. A. M. Shew, the Medical Superintendent, to whom, by the Act creating the Hospital, was committed the duty of procuring the plan of a suitable building or buildings, "and of personally superintending its erection and arrangement," has very faithfully and efficiently discharged his duties, has been untiring in his zeal and energy, and has personally supervised every part of the buildings and their appointments.

The General Assembly, at its last session, promptly voted a liberal sum for the completion of the buildings. The appropriation, from various causes, has proved to be insufficient, and the Board are therefore compelled to apply to the Assembly for such additional appropriation as will enable them to go on and finish their work. No more noble, no more necessary charity can be brought before the State; and if Connecticut would not be immeasurably behind her sister states in provision for the insane, a prompt and unhesitating response will be made to this application.

It will not be improper, nor out of place, in a Report of this kind, to cite the opinions of persons who have devoted much time and attention to these matters, and are fully conversant with the requirements of such institutions.

Dr. Kirkbride, the accomplished Superintendent of the Pennsylvania Hospital for the Insane, and President of the Association of Superintendents, thus remarks:

"Every one concerned in providing accommodations for the insane, may rely upon the fact being established by all experience, that the best kind of Hospitals, not only best built, but with the most perfect arrangements and fixtures of every kind, and managed in the most liberal and enlightened manner, are sure to be the most economical in the end, (for true economy consists not only in avoiding all waste and extravagance, but also in doing thoroughly whatever is undertaken,) will fulfill most completely the objects for which they are erected, and ultimately give most satisfaction to every enlightened community." Again, in another place, he remarks, "The difference in cost between a Hospital that is well-built, and one that is badly, between one that is complete in all its arrangements and one that is imperfect; between one liberally and one meanly managed, is really so small, that, if the good citizens of any State would make the simple calculation how much of this extra expense would fall upon each one of them, it can scarcely be credited that a single individual could be found anywhere, who would be willing to admit that he would not cheerfully bear his proportion of it, even if it had never occurred to him that, at some period or other, he might himself be compelled personally to test the character of the provision for the insane, made by his State."

Again, we quote from the "First Biennial Report of the Trustees for the Iowa Hospital for the Insane," made in 1861:

" The cost of hospital buildings for the insane cannot, with propriety, be estimated by the cubic foot, and placed in comparison with other public buildings, because the peculiar uses for which they are erected, require a peculiar and expensive construction and fixtures, which other State edifices do not require. Insane people must have ample room, and provisions for restoring health, and for the personal comfort and the security of each individual. Safety from the calamities of destruction by fire, and from the escape of inmates, is essential; but these safeguards cost many thousands of dollars in construction. The single extra item of window-guards has cost this Institution more than $4,000.

" The best sanitary arrangements in any case do not admit of crowded apartments, but the space required by the insane is more than double that usually allotted to the sick with other than mental diseases. About *eighty* per cent. of the insane require each a distinct and well ventilated apartment to sleep in, separated from others by walls of masonry.

" From an examination of the cost of modernly constructed first-class hospitals for the insane in the United States, (and it must be noticed that this Report was made in 1861, before the war and its results had stimulated and enhanced the cost of everything,) we find them to be not less than $1000 for each patient properly provided for, while the proportionate cost of some of them considerably exceeds this sum. Thus, the new Government Hospital for the Insane, near Washington, which is built of brick and will accommodate 300, or possibly 350 patients, has cost $473,040. The new Hospital for the Insane, near Cincinnati, also built of brick, has cost more than $1000 for each patient provided for; and the same may be said of the two new Hospitals in Northern and Southern Ohio, at Newburg and Dayton."

But again, we make a quotation from a memorial of Miss Dix to the Legislature of New Jersey in 1845: " It is said that the establishment of Hospitals involves expense, that it is much cheaper to maintain the insane elsewhere. Is it also computed at what actual cost these are supported in the State Penitentiary, in county jails, in poor-houses, and in families? What sums are consumed by their uncontrolled habits of destructive-ness; what are lost by their crimes, when under frenzied impulses they fire buildings, take human life, and make wreck of all social and domestic peace and happiness? What sums are uselessly expended in conducting the trials of insane criminals? What cost of supporting the large class of incurables, who, if timely treated, would have been restored to society and usefulness—to health and enjoyment?"

Lastly, we quote from a Report presented to the Fourth Annual Meeting of the Rhode Island Hospital, which thus concludes:

"It is objected by some, that Hospitals are expensive—of this we are fully aware; but are not streets and bridges very expensive? Are not our private residences, our churches, and other edifices very expensive? The practical question is not whether a hospital costs a large sum of money, but *whether it is worth what it costs*, whether the money is judiciously expended; no great institutions, dispensing their blessings from generation to generation, can be established without costing money. But what nobler use for money than to establish them? How trifling, and ignoble, and evanescent, are the objects of many of our expenditures, compared with the founding of a great institution for the relief of the suffering, for the healing of the sick, and for the exemplification of a true Christian benevolence for centuries to come?"

These remarks, so truly and appropriately made in reference to a "General Hospital," come with three-fold force when applied to a Hospital for the Insane.

The Board of Trustees has held regular monthly meetings during the year, and various members have besides, from time to time, visited the institution, inspected the work, and satisfied themselves that everything was going on well.

In accordance with the requirements of the Act creating the Hospital, the Board elected three additional Trustees from Middletown, viz., Hon. Benjamin Douglas, Hon. Julius Hotchkiss, and Rev. Dr. Joseph Cummings; and these gentlemen have zealously and effectively coöperated with the old Board, and participated in its doings and deliberations, thereby evincing the wisdom of the Legislature in providing for such addition.

In accordance, also, with the Amendment to the Act, passed at the last session of the Assembly, which separated the office of Treasurer from that of Superintendent, the Board elected M. B. Copeland, Esq. (Cashier of Middletown National Bank) to the office of Treasurer, which office that gentleman has since filled to the acceptance of the Board.

At the February meeting of the Board, held at the residence of the Hon. H. Sidney Hayden, of Windsor, (at that time disabled by a painful accident,) Dr. Winthrop B. Hallock was appointed Assistant Physician, and his wife, Mrs. Mary Hallock, Matron; and Charles W. Galpin, of Middletown, who had, from the inception of the undertaking, efficiently and satisfactorily discharged the duties of clerk to the Superintendent, was appointed Steward.

The Board also appointed a committee to prepare a code of By-laws and Regulations, and to fix the terms and conditions upon which patients should be admitted. This committee has discharged the duties assigned to it, and has drawn up and caused to be printed a series of rules and regulations, which have been approved by the Board, and are ready for the examination of the Legislature.

At one of the more recent meetings of the Board, a committee was appointed to ascertain the number of insane persons in the State, and circulars were sent to the selectmen and physicians of every town in the State, with blank returns to be filled up, giving the number, sex, age, and condition of all insane persons in the State, how and by whom supported, &c.

By a report submitted to the Legislature in 1865, it appears that there are about seven hundred insane persons in the State, though it is believed that this is considerably below the actual number. Partial returns from the selectmen and other sources, give five hundred and eighty-four as the present number of insane persons in the State, but this is evidently an incorrect computation, and much below the fact.

To show how difficult it is to get accurate returns of this sort, we refer to a statement of Dr. Edward Jarvis, of Dorchester, Mass., who, when Commissioner of Lunacy for that State, finding that no reliance could be placed upon the returns furnished by the national and State census, sent letters to every physician in the State, with blanks for them to fill and return. The result was, that while the national census of 1850 reported 1680 insane persons, and the State census of 1855 returned 1,909, the commissioner's record of 1854 actually gave the names of 2,632; and upon close and careful examination of these by himself, and afterward by the Legislature, only one name was found to be duplicated.

But to return to our State reports. By reference to these, and to communications received from reliable private sources of information, it is found that there are many cases of insanity in the State, the mere recital of which would melt a heart of stone. Some have been confined in out-houses for twenty or thirty years, or more; others kept in private families and chained by a leg to the floor; others still subjected to the most cruel and inhuman systems of restraint, receiving no medical attendance, and with no prospect of change or improvement. Now, the fact that such things are true in this nineteenth century, and in so advanced, enlightened, and wealthy a State as Connecticut, shows very clearly and forcibly the need of such an institution as that of which we have the honor and privilege to be in charge; and we can truly affirm that Connecticut has not been a day too soon in making the munificent provision which she has begun, and will doubtless continue to make for the care and protection and restoration of this preëminently unfortunate class of her children. Ordinary sickness of any kind, especially when combined with poverty, is grievous to be borne; but who can estimate or properly depict the horrors of a malady which abolishes reason and judgment, which destroys the mind as well as the body, and consigns an immortal soul to the untold miseries of insanity! The Almighty only knows the depth and amount of such a condition of suffering, and He will demand from those of us who are more favored, a strict account of the treatment which such unfortunates receive at our hands.

From what has now been said, it will be seen that the care of the insane, and more especially the insane poor, is not a mere question of dollars and cents, but of sound policy, true economy, a wise humanity, philanthropy, and religion. Such is the view which the members of this Board take of their trust, and such, we believe, is the view that will be taken of it by your Honorable Body.

The cost of the buildings may to some appear large, but we can conscientiously affirm that not a single dollar has been wasted or misapplied. The State of Connecticut is wealthy and liberal, and this Board, as the almoners of her bounty, did not dare to erect a mean, niggardly, inappropriate structure, when such grave and important interests were involved. They were not limited by public enactment to any specific amount, and they were perfectly aware that the educated and enlightened public sentiment of the State would not sanction, nor allow of, any miserly and illiberal construction of the Act which created this much-needed Institution. They have therefore gone forward, and actuated by prudence and economy, as well as a desire to carry out what they believed to be the intent of the people of the State, have partially erected an edifice, which is designed not only for to-day, but for future years, and which they are satisfied will fully meet the wishes and expectations of the State.

The funds, so liberally appropriated by the last Legislature, are now exhausted, and to complete the center building and north wing, and meet outstanding obligations, a further appropriation of $162,384 will be required. The Board do not entertain a doubt that this sum, and more still, if requisite, will unhesitatingly be voted by this Assembly. Indeed, the members of the Board have become individually and jointly liable for the sum of $30,000, in the shape of a loan from the banks, because they saw last autumn that if funds were not at once provided, the work must come to a stop, to the very great detriment of the public interest, and to the occasioning of injurious delay as regarded the class of unfortunates for whom the institution was designed. There is, in addition, a debt of $41,614 for materials, fixtures, furniture, labor, &c., to be provided for from the next appropriation. We said "injurious delay," for every day that defers the reception and treatment of these patients, increases the difficulty, and diminishes the probability of their restoration to health and sanity.

It is unnecessary at this day to go over the whole ground of argument in favor of the early treatment of the insane, whom it is well known cannot be successfully treated at home; and we will mention here another fact—to which we may again recur—that from eighty to ninety per cent. of recent cases are curable. We shall, however, adduce the opinions of those who have had large experience in the care of this class of patients.

We make, in the first place, a brief extract from the report of the Superintendent of the Iowa State Hospital, bearing upon this point; and his statements are equally applicable to our own State:

"For several years prior to the opening of this Hospital," he says, "the insane of this State had been necessarily confined in jails with criminals, and in county infirmaries (poor-houses) in gradually increasing numbers, until there existed the most painful necessity for other and more appropriate accommodations for them. During the last ten years, a few of the insane of the State had obtained places in the institutions of other States, at an inconvenient expense; private families have been burthened, and their safety put in peril by others; and upon some the grave has prematurely, though kindly, closed. But the majority have, for no crime, been compelled to occupy, more or less, the felon's cell. Relief, though tardy, came at last, and so great was the desire of citizens to obtain admission for their afflicted friends, that, during the first twelve weeks, more than one hundred patients were admitted. It is painful to add, that, so long had these poor sufferers been confined under adverse sanitary circumstances, not one in ten of all this number will ever recover the right use of reason; whereas, eighty or ninety of them, under the best treatment, early applied, would certainly have been cured. These are facts which should arrest the attention of every citizen. They show most clearly the importance of the earliest possible application of restorative treatment. Insanity is only curable, as a rule, before the delicate textures of the brain have suffered injury from chronic disease. For the curative treatment of mental diseases, a month during their incipient stages is worth more than a whole year in their advanced stages. Indeed, no subsequent period, however protracted, can compensate for the loss of the golden early period in which to treat successfully diseases of the mind."

In the memorial of Miss Dix, before referred to, we find tables showing the relative expense of supporting old and recent cases of insanity, and we quote a few of the figures:—

From Dr. Awl's Report of the Ohio State Institution, for the year 1840, it appears that the

Average cost of supporting old cases was . .	$1,903.60
" " " new " " . .	56.00
Report of 1841, average cost of old cases was .	1,969.00
" " " new " " .	52.22
Report of 1842, " old " " . .	2,020.00
" " " recent " " .	45.20
Report of 1843, average cost of old cases was .	2,239.10
" " " new " " .	65.41
In Massachusetts for 1843, old " " . .	2,166.20
" " " new " " .	58.45
In Maine for 1842, " old " " . .	2,108.33
" " " new " " .	35.50
In Virginia (Staunton) " old " " . .	2,081.65
" " " new " " .	63.25

Of course this very great difference in cost is owing to the fact that the recent cases are soon cured and discharged, while the old or chronic are kept on indefinitely, but it is no less a strong and irrefutable argument in favor of the early treatment of cases of insanity.

Every consideration, then, of humanity, of economy, of sound policy, goes to sustain and enforce the appeal we now make to the State, for prompt and liberal assistance in completing the work entrusted to us. It is superfluous to say that the members of this Board have no other or further interest in this matter than that shared, or which should be shared, by every citizen of the State; but the very important trust having been imposed upon us, without any seeking or solicitation on our part, we feel a greater responsibility on account of our official connection with the institution, and are therefore desirous that the work shall be pushed on as speedily and vigorously as possible.

We might, to be sure, have provided at less cost, a flimsy, unsubstantial, and inappropriate building, but we did not, and do not believe this to be the wish and intention of the people of Connecticut. We have therefore endeavored faithfully and conscientiously to discharge the trust imposed upon us; to promote the best interests of the State, and of that very interesting and deeply afflicted class of her children for whom this Hospital is intended.

Many urgent calls for the accommodation of patients have already been received from different parts of the State. The officers of the Retreat at Hartford have notified the various towns having *male* patients under their care, that they must remove them by the first of May, as it has been determined to expend $100,000 in altering and improving that excellent and well managed institution. Some, even, of private patients, a class for which that Hospital was, and is designed, must be removed, to allow of the contemplated improvements.

These and other facts have convinced the Board that great distress and perplexity will result, should the completion of the State Hospital be delayed, and that they will be fully justified in carrying forward the work intrusted to them.

It now rests with your Honorable Body to say whether the work shall go on and be completed in a manner befitting so wealthy, enlightened and benevolent a State, and we do not doubt that the wisdom and sound policy of this Assembly will be evinced by directing the Board of Trustees to go forward with their noble and important work, so that all those who are entiled to claim, may, as speedily as possible, receive its benefits.

We append, for the information of such members of the Legislature as may not be familiar with the facts, a brief summary of what other States have done and are doing in behalf of their insane, and trust that Connecticut will not long be behind the record.

We make an extract from the Fourth Annual Report of the Directors and Superintendent of the West Virginia Hospital for the Insane, for 1867.

" *Massachusetts*, with five large Hospitals within her borders, is providing a sixth;" and has several municipal and private establishments.

New York, with five large public, and some excellent private Hospitals, has just resolved to erect two more that will cost nearly, if not quite, a million of dollars. *New Jersey*, small, but brave in duty, with one of the best Hospitals in the world, has just resolved to provide for all their insane, and is enlarging at an expected cost of two or three hundred thousand dollars. *Pennsylvania*, with five Hospitals of large size and some smaller ones, is enlarging its Western Hospital, and canvassing for another, in some unprovided section of the State. *Maryland*, with two excellent Hospitals, is now building two more, that when finished, will cost together over half a million of dollars,—one of them being from private munificence entirely; (and the State has recently voted an appropriation for the enlargement of one of the older.)

Ohio, with five excellent Hospitals, (one devoted to the colored insane,) has just resolved to enlarge two of them to more than double their present capacity, and also to erect a sixth, equal to any of the others, the cost of all which is estimated at from one-half to three-fourths of a million of dollars.

Kentucky has two, and means "to provide for every insane person within her limits."

Iowa, Indiana, Maine, Vermont, New Hampshire, Alabama, Virginia, and almost all the other States, have at least one; and even little Rhode Island, besides a large Hospital for the Insane, has recently built a General Hospital at Providence, which, up to September 30th, 1867, had already cost about $338,000, and will, when completed, reach the sum of $500,000. Very recently, moreover, this noble little State has taken preliminary steps for building another Hospital for the Insane. Will Connecticut be behind her sister States in making ample provision for all her insane poor? We will not believe it. The supposition is a reproach to her fair fame and honor.

We cannot better or more appropriately conclude this Report, than by making a few quotations from the addresses of Gov. English and Ex.-Gov. Hawley, on the occasion of laying the corner-stone of the Hospital.

"It is true," remarked Governor English, "that we have a large State debt, and besides that, a large national debt to carry, but there are few citizens of Connecticut who would wish the State to refuse to do her duty to the suffering and unfortunate class for whom this Hospital is building.

"This is the founding of one of the noblest charities to which humanity can be devoted. It promises to reward all our care, all our expenditure, all our hopes, with a rich harvest of benefits. In the coming years, its blessings will flow as broadly and deeply, and at the same time as beneficially, as the waters of yonder river, in a never-ending stream.

"Large as some may consider the last appropriation, it is small when compared with the magnitude of the evil to be met, and the demands of this class of unfortunates upon our charity, and especially when compared with the population of the State. In Connecticut, there are upwards of half a million of people. This appropriation will only add an average of 30 cents to the list of each tax-payer, and what a work of good is by this small expenditure accomplished! No one who shall see this Institution in practical operation, and note the patients who shall be cured or benefitted here—patients suffering from the direst curse that can fall upon poor humanity—will ever regret the small proportionate share he pays to aid this noble work.

"I rely upon the willingness of the State to carry out the philanthropic enterprise she has begun. This enterprise, with others of a similar character, is due, in a great measure, to the intelligence of our people. Our system of common schools, so generously sustained from the earliest period of our history, has contributed largely to the beneficence of this great charity. A philanthropy, dictated by intelligence, can hardly fail of beneficial results."

"The history of such efforts as this," said Governor Hawley, "is frequently marked by hesitating grants of money through a long series of years, amounting to double or treble the sums that private enterprise would expend in producing similar results, and by favoritism in contracts and appointments, useless display, general extravagance, and even fraud.

"More cannot be asked than that this Institution shall be as free in the future, as it has been in the past, from such misfortunes, errors, and crimes."

He then referred to the "wise, prompt, and large-minded action of the General Assembly," and noting the fact that of the seven hundred or more insane patients in the State, of whom only a small portion could be accommodated in the Hartford Retreat, goes on to add, "And there are more than two hundred in the almshouses of the towns, where it is altogether impossible that they can be treated as common humanity and the honor of the State require." "The moneys expended by the commonwealth and the municipal corporations in these various unsystematic and unsatisfactory ways are probably sufficient, when concentrated upon this institution, to take proper care of these unfortunate brothers and sisters. But the General Assembly made no attempt to avoid its responsibilities. It made no nice calculations of profit and loss in dollars and cents, though it would be easy to show that *that State makes most money, which best cares for the destitute and suffering.*"

No words of ours can augment the force, or heighten the effect of the stirring and impressive language of these quotations; and with this we are content to submit the whole matter to the wisdom and intelligence of your Honorable Body.

We append the Superintendent's Report for the past year, with his estimates for completing the center building and north wing; also a letter from Mr. Hutton, the architect of the Hospital, in regard to the estimates. The statement which this gentleman makes should have great weight, as the firm to which he belongs has had an extensive experience in buildings of this character, and has designed and superintended the erection of most of the more recent hospitals in the United States.

These estimates amount to $75,770, which, added to the debt already due of $41,614, and the sum borrowed by the Trustees, $30,000, and the further sum needed for furniture, $15,000, makes the total amount required $162,384.

Besides this, there are barns and fences to be built, grounds to be graded and laid out, stores and stock to be purchased;

and many other things to be done, for which no precise or definite estimates can be made. For these we need, and most respectfully ask, an additional appropriation.

That the work may not stop, and the valuable time that must elapse before the meeting of the Legislature, may not be lost, the Board of Trustees, at their annual meeting, held April 8th, 1868, again voted unanimously to obligate themselves individually for the purpose of obtaining funds to meet the necessary payments and expenditures.

MR. HUTTON'S LETTER.

PHILADELPHIA, March 13, 1868.

To the Board of Trustees,
General Hospital for Insane, Conn.

GENTLEMEN:—At the request of Dr. Shew, I have examined his estimates for the completion of the North Wing and Center Building of the new structure at Middletown, and having carefully compared them with the expenditure involved in the work already done, am ready to vouch that they are sufficient to put the same in working order. His exhibit denotes specifically what is contemplated, and with the same energetic and careful management that has characterized last year's operation, the figures therein named are liberal enough to *do well* all that is proposed to be done.

I cannot let this opportunity pass without the statement, that, in all my observation, I have never seen a building more *thoroughly well built*, nor, in view of this fact, with greater economy. Hoping that your efforts to complete the whole will meet with entire success in every respect,

I am truly yours,

ADDISON HUTTON, *Architect.*

From the West Virginia Hospital report, before referred to, we copy a tabular statement of several Hospitals for the Insane, with cost of building, &c., remarking only, that all these were built before the late war, and consequent advent of high prices; and it would be a moderate estimate to add now fifty per cent. to the prices then ruling.

NAME, &c.	Capacity.	Cost.	Cost for Patient.
New York State Asylum, Utica,......	440	$517,400	$1,185
Maryland Hospital, Baltimore,........	130	213,600	1,443
McLean Asylum, Somerville, Mass....	200	321,000	1,605
Penn. Hosp. for Insane, Philadelphia,.	240	330,000	1,377
New " " " "	250	325,000	1,300
New Jersey Asylum, Trenton,........	250	250,000	1,000
Maine Hospital for Insane............	175	150,700	861
Mt. Hope Institution, Baltimore, ...	120	200,000	1,666
Butler Hospital, Providence, R. I......	140	116,000	828
Lunatic Asylum, Taunton, Mass.,....	250	250,000	1,000
Michigan Hospital, Kalamazoo, ...	288	340,000	1,180
Northampton Hospital, Mass.,........	250	335,000	1,340
Iowa State Hospital, Mt. Pleasant,....	250	359,666	1,440
Average cost *per capita* before the war,	....	......	1,248
" " " " with 50 per cent. added for increased prices, since the war,..................	....	......	1,872

Now let us see how this average compares with the expenditures already made, and to be made, upon our Hospital.

The first appropriation by the State was . . .	$35,000
" second " " " . .	150,000
Loan from the Trustees, ...	30,000
Funds required to finish center building and north wing, as by Superintendent's estimate, . .	75,770
For furniture for center and north wing, . . .	15,000
Existing indebtedness, ...	41,614
Total, . . .	$347,384

Multiply the above average of $1,872 by 200—the number of patients which the centre building, and north and south wings, when finished, will accommodate—and the resulting figures are $374,400; so that thus far the cost of our Hospital has been within the average. But one important fact must be kept in mind, viz., that our Institution was, and is, designed for 450, instead of 200 patients; and that all the out-buildings, the center building, and their numerous appointments, were planned, and have been constructed and provided with that ulterior view, so that as a matter of fact, the edifice, thus far, has been built very economically under all the circumstances, and at considerably less than the average arrived at by the above table.

All which is respectfully submitted.

James E. English,	*New Haven.*
H. Sidney Hayden,	*Hartford County.*
Leverett E. Pease,	*Tolland* “
S. G. Willard,	*Windham* “
B. W. Tompkins,	*New London* “
Wm. B. Casey,	*Middlesex* “
R. S. Fellowes,	*New Haven* “
Curtiss T. Woodruff,	*Fairfield* “
Robbins Battell,	*Litchfield* “
Benj. Douglas,	*Middletown.*
Julius Hotchkiss,	“
Joseph Cummings,	“

Middletown, April, 1868.

REPORT

OF THE

SUPERINTENDENT TO THE BOARD OF TRUSTEES

OF THE

GENERAL HOSPITAL FOR THE INSANE,

OF THE STATE OF CONNECTICUT.

Gentlemen:—In compliance with instructions received from the Board at its last meeting in March, 1867, "to resume work whenever the season should permit," excavations were begun on the first day of April by such force of workmen as could be advantageously employed.

SEWERAGE.

Your attention was early directed to the importance of having ample provision made to carry off the surface water during the construction of the building. By your direction, therefore, an eighteen-inch cement pipe was successfully laid, during the month of April, from the center building directly east, a distance of one thousand feet, with a descent three-sixteenths of an inch to the foot. This drain pipe is abundantly adequate to carry off the waste water from the laundry and kitchen, and the bath and wash rooms of the whole building.

CARPENTER SHOP.

At the same time masons were engaged in carrying up the walls of a permanent two-story stone building, twenty-seven feet in width by fifty-two feet in length, to be used as a carpenter and work shop. The first story of this building has a work bench extending the entire length of one side, one circular saw and one scroll saw, and a large grindstone. In the second story are placed three benches with sufficient room for twelve carpenters. The attic, with mansard roof, makes a most convenient paint and glazing shop.

The motive power driving the machinery alluded to is, water from our dam (described below) in the use of a six inch turbine wheel, manufactured by and presented to the Institution by Mr. Dwight Cushman of Hartford; and it gives me pleasure to mention it, that this wheel, with a power adequate to all the mechanical appliances of the shop, has been eminently successful in its workings, and entirely without repair to this date.

The importance of the early erection of the above shop-building was manifest, as in it would be prepared all the wood-work throughout the entire Hospital edifice. It is a permanent, good structure, and will supply to convalescent patients the means of light employment to their great advantage, and therefore to the profit of the Institution.

DAM AND RESERVOIR.

Early in April, 1867, Mr. George H. Norman, with whom a contract had been made for a dam and appurtenances, and for the providing and laying of necessary pipe to convey water to the building, commenced and prosecuted the work with vigor. Six thousand five hundred feet of six inch cast iron pipe were laid in accordance with the minute specifications of the contract before the fifth day of May, thus providing a supply of water for mechanical and other purposes during the entire season.

The turbine wheel has been in constant use, and at all times more water has passed around the waste canal from the reservoir, than was used on the grounds.

EXCAVATIONS.

Simultaneously with the prosecution of the work heretofore mentioned, laborers were employed in excavating for the foundations of the main buildings.

In order to render this portion of the report intelligible to those not acquainted with the practical details of a work of the magnitude of your Hospital, I would state that in excavating for foundations and cellars, about twelve thousand cubic yards of earth were removed a distance of several hundred feet. The soil, consisting principally of "hard pan" and gravel, formed at all points an unyielding foundation for the heavy walls of the superstructure.

By employing an adequate force of masons, and by working over hours for a few days, the cellar walls, two feet eight inches in thickness, and seven feet six inches in height, were completed previous to the ceremony of laying the corner-stone on the twentieth of June.

UNAVOIDABLE DELAYS.

During the months of July, August and September, much embarrassment and delay occurred in consequence of the unusual number of wet days.

To those having the grave responsibility of the building operations, the constantly recurring rains and showers were a source of care and great anxieties. Incessant forethought was required to prevent damage to the walls and loss of material from the washing of mortar-beds during the continuance of sudden storms.

It also became necessary to erect temporary sheds under which the masons and stone-cutters could work without interruption.

To those who are not practical builders these hindrances of weather may not seem as important as they really are; but when it is considered that nearly two hundred men were employed, and that each man would lose from five to ten minutes in changing from scaffold to sheds, it must be evident that the aggregate of time lost amounted to a large total.

BUILDINGS ENCLOSED.

Notwithstanding the above embarrassments and delays, we succeeded in enclosing the center building, intermediate and south return wing, the laundry and the boiler-house, during the season.

DESCRIPTION OF THE CENTER BUILDING.

The dimensions of the center building are sixty feet in width, one hundred and twenty feet in depth, and four stories in height. The walls are constructed of Portland freestone, laid in broken range work, two feet four inches in thickness, with tool dressed quoins, windowsills and caps, water-table, belting course and cornice, surmounted by a " French roof " of slate and tin.

Inside the stone wall there is a four inch brick lining, leaving an air space of two inches between it and the stone, thereby insuring dryness.

DESCRIPTION OF SOUTHERN WING.

The southern wing is forty feet in width, one hundred and twenty-four feet in length, and three stories in height, with an " L " or return wing, which also is forty feet in width, one hundred and eight feet in depth, and four stories in height. The walls are one foot eight inches in thickness, and have a brick lining similar to that described in the center building. The corridor and partition walls, thirteen inches in thickness, are made of brick with an air space of five inches in the center, in which are carried up all the hot air and ventilating flues, than which mode none can be more safe from the danger of fire. These ventilating flues are supplied by air forced through a passage (seven feet in height by twelve feet in width) running under ground from rear of boiler-house into the cellar of center building.

The interior part of the building is plain but substantial; the wood work being of Georgia yellow pine, oiled and varnished.

The floors are laid with three and four inch matched stuff, with coarse counter floors beneath.

The first story will be used as a ward for excited patients. The rooms on each side of the corridor are filled with inside window shutters hinged and locked. Four of these strong rooms are supplied with iron closet-bowls, and a separate hot air flue for each.

The large triple windows are protected in this story by screen partitions of wood and iron pipe, as suggested and adopted by Dr. Nichols, Superintendent of the Government Hospital for the Insane at Washington, D. C., and in the second story by painted iron wire screens.

The southern wing is adapted to one hundred patients divided into four classes. The wards consist of a corridor twelve feet in width and height, and are one hundred and twenty-four feet in length, with a space on each side adjoining the center building for light and air, and a large triple-window at the south end.

The "L" hall in the south return wing is ten feet in width, and at right angles with the corridor, and will form the connecting hall with the extension south when it shall be erected.

Each ward contains one dining-room, one day or reading-room, two "associate dormitories," for four and six patients, two dumb-waiters, one dust-flue, one front and one rear hall and stair-ways, two rooms for sick patients shut off by a passage-way from the main corridor, eleven single rooms, one clothes-room, and one large room for attendants.

In each hall there is a water-closet and wash-room adjoining the bath-room. The water-closet bowls are enameled cast iron, funnel shape, and flushed with water whenever the door is opened, by a spring attachment. The waste-pipe from the closet and "slop-hopper," leads to the main soil-pipe, and this having a connection with the tall chimney of the boiler-house, as hereafter described, completes the system of "downward ventilation."

In the wards already completed there are four cast iron bath-tubs, of the approved pattern of Messrs. Morris, Tasker & Co., of Philadelphia. The supply of hot and cold water and the waste, pass through one opening in the bottom.

In a vertical flue from basement to upper stories, opening by a door in each bath-room, is a "pipe-closet" connecting the supply of hot and cold water with each bath-tub, and accessible only to the attendant. In each pipe-closet is a fire plug with a length of hose permanently attached; and adjoining this, a steam drying-room, containing coils of iron pipe placed under a rack upon which damp clothing, bedding or wash-rags can be dried.

LAUNDRY.

Referring to the plan accompanying your Report, it will be observed that the laundry-building, located sixty feet in the rear, is connected by an underground passage with the center building, in which passage a tram-way will be placed for conveniently conveying clothing and bedding to and from the wards.

The first story of the laundry-building is divided into three large rooms; one, forty feet in length by twenty feet in width, will be used as the bakery; a room opposite, of same size, as an ironing and folding room. The washing will be done in the rear room, fifty feet in length by twenty feet in width, and will contain Hydraulic Washers, of Smith's patent, made by the New York Laundry Manufacturing Company, 18 Dey street, New York, with stationary tubs and steam heated drying-closet. The second story is divided into a large sewing-room, (connected with the ironing-room below by a "dumb waiter,") one linen or store-room, and six sleeping-rooms for female employees.

BOILER-HOUSE, HEATING APPARATUS AND CHIMNEY.

For the complete protection and preservation of the Hospital building from danger arising from the fires used in generating steam for heating purposes, a two-story stone building, sixty feet in length by twenty feet in width, has been erected one hundred and fifty feet in the rear of the Hospital, for the boilers and various fixtures necessary to a steam-heating apparatus. The first story contains the boiler-room on the north end, and a fitting shop on the south end. The second story contains four rooms for male employes, and one large storeroom over the boilers. From the center of this building arises a brick chimney eighty-four feet in height, built in the most substantial manner, six feet internal diameter, surmounted by a cast iron cap. Two large flues from the main sewer open into the smoke stack, perfecting the system of "downward ventilation."

STEAM HEATING.

The steam used during the winter for warming the Hospital has been generated in a tubular boiler, sixteen feet in length by four feet in diameter, and conducted through a five-inch wrought iron pipe covered with felting, to the cast iron radiators, (Gold's patent,) placed in the cellar corridor or air-duct of the Hospital building.

By the use of this (Gold's patent) apparatus, put up in stacks of from eight to twelve radiators in each box, about sixteen feet apart, the apartments are severally heated in stories, one above another.

It will be necessary to have two additional boilers of similar dimensions to supply heat during the next winter. It is supposed that three boilers will be adequate for the purpose when the north wing is occupied.

The heating and ventilation are to be effected by the forcing of a constant current of pure air over the radiators, through which the steam circulates, and which, after condensation, is carried back in a warm state, to resupply the boiler.

The forcing power is the fan, twelve feet in diameter, placed in the rear of boiler-house, as before mentioned, and kept revolving by water; and a most necessary and important auxiliary to our ventilating system in summer and winter, so needful in the rooms of insane patients.

GAS.

During the month of November your committee made arrangements with the Middletown Gas Light Company for the laying of a main pipe, from their works to the Hospital, at the very moderate cost of one thousand dollars. In a large Institution of this character a very important advantage of illuminating by gas over other modes is the security against fire, and also economy and cleanliness would equally recommend it.

RECAPITULATION.

From the preceding statement of work done it will be seen that the past year has been one of constant and unremitting toil to those having charge of the building operations.

Only twelve months have been consumed in erecting and finishing a series of buildings, which have required in their construction—

Of stone, Four thousand perch (twenty-five cubic feet to the perch.)
Of brick, One million five hundred thousand.
Of lime, One thousand seven hundred casks, or two hundred and seventy-five tons.
Of S. Y. Pine, Five hundred thousand feet.
Of White Pine, Seventy thousand feet.
Of Spruce, Eighty thousand feet.
Of Hemlock, Fifteen thousand feet.
Of Nails, Ninety kegs, or four and one-half tons.
Of Roofing Slate, Twenty-five thousand square feet.
Of Iron Pipe, Fifteen thousand feet, or about three miles.
Of labor of men, Thirty-two thousand one hundred and sixty seven days.
Of labor of horses, Two thousand five hundred and twenty-three days.

To arrange for the need, to contract for, prepare and judiciously use in one year the amount of material here tabulated, has required the undivided time and attention of those holding positions of trust under the direction of your Board. In this connection I cannot refrain from alluding to the fidelity of those whom you have associated with me in this great work.

To Messrs. Hose, Hubbard and Galpin is due an acknowledgment of the valuable services which they have respectively rendered.

By your consent and authority, contracts were at various times made with the following named parties:—

Reservoir, dam and connection pipes with building, one and a quarter miles: Geo. H. Norman, Newport, R. I.

Georgia Yellow Pine: New Haven Steam Saw Mill Co., New Haven, Ct.
Stone, wall and dimensions: Middlesex Quarry Co., Brainard and Co., and Shaler and Hall, Portland, Ct.
Lime, cement, nails, and glass: Hubbard Brothers, Middletown, Ct.
Brick: Eugene Strickland, Middletown, Ct.
Iron Sash: H. A. Converse & Co., Hartford, Ct.
Wood Sash: R. Joslyn, South Manchester, Ct.
Roof Bolts: Plants' Manufacturing Co., Plantsville, Ct.
Roofing Slate: Cook, Overfield & Snedeker, New York.
Tin Roof: B. C. Bacon, Middletown, Ct.
Turbine Wheel: Dwight Cushman, Hartford, Ct.
Steam Boiler and Pump: Pitkin, Brother & Co., Hartford, Ct.
Steam Radiators: H. B. Smith & Co., Westfield, Mass.
Steam and Gas Pipe: H. P. Blair, Hartford, Ct.
Bath Tubs and Closet Bowls: Morris, Tasker & Co., Philadelphia.
Wrought Iron Window Guards: Bancroft & Co., Philadelphia.
Coal: White and Loveland, Middletown, Ct.
Doors and Bedsteads: Hubbard and Burrows, Middletown, Ct.
Registers: Tuttle and Bailey Manufacturing Co., Boston, Mass.
Locks and Knobs: Mallory, Wheeler & Co., New Haven, Ct.
Gas Fixtures: Tucker Manufacturing Co., Boston, Mass.

There is now on hand, with which to operate this season, of cut stone about one-third of the amount required, and of yellow pine for joists, &c., nearly enough to complete the northern wing.

The estimates of last year, which, being unexpectedly called for, were prepared in one night without the assistance of the architect, have failed to meet the requirements of your building, owing mainly to the large item of labor. While the Act creating the office of Superintendent makes it the duty of that officer to procure the plan and personally superintend the erection of the Hospital building, (which you are aware I have done to the extent of my ability,) it could not have intended that I should be wholly responsible for the correctness of all the estimates of the details of the building, a matter out of the range of the usual duties of a Physician. The estimates offered with so short a time for mature preparation in June last, were known by all those who had the matter more immediately under their notice, to have been prepared under pressure; yet they were believed fully by me to be adequate for the purposes proposed, except so far as a few items, not very materially affecting the total, were reduced by those of the Trustees who saw the draft. I had no expectation of the estimates being printed and relied upon as absolutely adequate, and as if they were the conclusions of experienced builders. I now see that it was a grave mistake not to have taken several days and submitted our whole calculations, and value of materials on hand, to your architect for an authorized opinion.

By your direction payments have been made as far as the funds would permit. All the outstanding liabilities on account of building operations, amount to forty-one thousand six hundred dollars ($41,600,) as per tabulated statement rendered.

To complete the center building and northern wing, and other necessary work remaining to be done, and to meet the debts already contracted, the further sum of one hundred and sixty-two thousand three hundred and eighty-four ($162,384) dollars will be required.

The Hospital farm has, during the year, been a source of profit. About seven hundred dollars were received for pasture land, and about fifty tons of hay cut for our own use. As yet nothing has been attempted in the way of laying off and ornamenting the grounds for the patients, a thing highly important with all Institutions for the insane. Nor have enclosures been made in connection with the building, for the safety and increased comfort of patients. The hope is entertained that during the coming season much may be done in this direction.

Of the urgent necessity for a Hospital in Connecticut many who will read these pages are fully aware; there is, however, a large number to whose minds this claim presents itself as of no serious and positive obligation. I would respectfully and earnestly urge all such to spend one single day in visiting the scenes of misery found wherever the insane are confined in jails or almshouses.

With the completion of your Hospital on its original plan, in which various forms of innocent recreation are to be provided, much of this suffering and misery can be alleviated.

Already numerous applications for admission have been received from all parts of the State, showing conclusively that this great work was not commenced prematurely. As the number of patients increases, the cost of keeping them will be proportionally diminished,—the expense of heating, lighting, cooking, &c., not being much greater for two hundred than for one hundred. It is estimated that the average expense of keeping one hundred patients, at the present high rate of prices for the necessaries of life, will be four and one-half ($4.50) dollars per week. This includes board, washing, mending, lodging, medicine and attendance, and various other expenses incident to the curative means adopted in our practice.

In conclusion, gentlemen, I desire to express my grateful sense of obligation for the encouragement you have afforded me amid the labors and anxieties of the past year. With an earnest desire to promote the interests of the Institution, and with firm resolution to ensure its success and usefulness in the future by executing, to the extent of my ability, your philanthropic designs, this report is respectfully submitted.

A. M. SHEW, *Superintendent.*

MIDDLETOWN, CT., April 1st, 1868.

M. B. COPELAND, Treasurer General Hospital for the Insane, in account with the State of Connecticut.

DR.

To amount on hand April 1st, 1867,	$202.97
" balance appropriation, 1866,	10,000.09
" amount " 1867,	150,000.00
" " received of town of Middletown on account dock and work on road,	980.92
" amount received for rent, &c.,	912.86
" " borrowed on individuul notes given by the Trustees,	28,964.38
	$191,061.12

CR.

By salaries of officers,	$2,333.34
" land,	1,185.62
" stationery, postage and revenue stamps,	259.04
" furniture, fixtures and safe,	253.85
" fuel and lights	417.19
" lumber, lime, cement, hair, paints, oil, putty, wood, sash and doors,	25,485.37
" brick and sand,	8,714.41
" stone,	6,763.26
" slate, lead, sheathing, and putting on roof, and tinner's bill, roofing, conductors, and putting on,	5,294.78
" Trustees' expenses (traveling,)	177.56
" Superintendent's board,	621.41
" iron sash, arch plates, work on sash patterns, shafting, blacksmithing, iron beams, lightning rods, blacksmith shop and tools, roof and stage bolts, piping, &c., &c.,	4,131.38
" shovels, hoes, picks, saws and saw tables, boring machines, locks, screws, registers, soil pans, &c.,	926.59
" boiler, steam pump, pipe and fittings, radiators and hair felt,	5,600.36
" horses, wagons, sleighs, harnesses, hay and feed, mowing machine and rake,	3,039.18
" water works and land damages,	17,630.00
" transportation,	2,302.78
" pay of employees,	101,099.73
" Architect's accounts, plans, &c., sewer pipe, fence posts and stage poles, dock, derricks, bell, rent, hose, printing, advertising, insurance, &c., &c.,	4,542.48
" amount on hand,	282.79
	$191,061.12

MIDDLETOWN, April 1st, 1868.

I hereby certify that I have examined the vouchers and accounts of the Treasurer, of which the above is an abstract, and found them correct.

BENJAMIN DOUGLAS, *Auditor.*

MIDDLETOWN, April 22d, 1868.

ADMISSION OF PATIENTS.

1. Whenever a patient is sent to the Hospital by the order of the Probate Court, the order or warrant, or a copy thereof by which such a person is sent, shall be lodged with the Superintendent.

2. Each patient, before admission, shall be made perfectly clean, and be free from vermin, or any contagious or infectious disease.

3. Each male patient shall be provided with at least two shirts, one woolen coat, one woolen vest, one pair of woolen pantaloons; two pairs new socks; one pair new shoes or boots, and one comfortable outside garment.

Each female patient shall, in addition to a quantity of under clothing, shoes and stockings corresponding to that required for the male patient, have one flannel petticoat, two good dresses, one cloak or other good outside garment. Extra and better apparel is very desirable for chapel worship, and out of doors exercise and riding

4. In all cases the patient's best clothing should be sent; it will be carefully preserved, and only used when deemed necessary for the purpose above mentioned. Jewelry, and all superfluous articles of dress, knives, &c., should be left at home, as they are liable to be lost, and for which the officers of the Hospital are not responsible.

5. A written history of the case should be sent with the patient, and, if possible, some one acquainted with the individuals should accompany him to the hospital, from whom minute, but often essential, particulars may be learned.

6. The price of board, including washing, mending and attendance for all who are supported at the public charge, is four dollars and one-half per week.

7. Pauper patients, or those supported partly by the towns in which they reside, and partly by the State, are admitted agreeably to Sections four and six of Amended Act, 1867, and By-Laws.

8. Indigent persons, or those possessing little property, and partly supported by friends and partly by the State, are admitted under Section four of Amended Act, 1867, and By-Laws.

9. Private patients, or those supported by themselves or their friends, are admitted to the Hospital under Section five of amendment to Act approved July 23d, 1867, and By-Laws.

10. Visitors are admitted to the Institution on any day (except Sunday) between the hours of ten A. M. and twelve M., and between two and four P. M., but no visitors shall be admitted to the wards occupied by patients, without express permission from the Superintendent, and especial care is to be taken that no amount of visiting is permitted that might prove injurious to the patients.

FORM OF APPLICATION.

The friends of patients or others making application for admission into the "General Hospital for the Insane," at Middletown, Ct., are requested, with the assistance of the family physician, to annex full and complete answers to the following questions:—

1. What is the patient's name?
What is the age?
Is single or married?

2. Where was born?
Where is present residence?

3. What is occupation?
If a female, that of the husband or father?

4. When did the first symptom of insanity occur, and in what manner?

5. Is this the first attack? If others, when and what was their duration?

6. Has the patient any permanent hallucination, and what is its nature?

7. Has the patient any disposition to injure others? If so, is it from premeditation or sudden passion?

8. Does the propensity to suicide exist? Has the patient ever made an attempt? If so, in what manner?

9. Has the patient a disposition to destroy clothing, furniture, &c.?

10. What was the patient's natural disposition? Was there any peculiarity or eccentricity?

11. Have any members of the family ever been insane? On the father's or mother's side? Were the parents blood relations?

12. Has the patient ever been addicted to the intemperate use of intoxicating drinks, opium, or tobacco? Does the patient indulge in any improper habits?

13. Has the patient ever had an injury of the head, epilepsy, or any hereditary disease, sudden suppression of any eruption or accustomed discharge?

14. What is the apparent cause of this attack?

15. Has any restraint or confinement been resorted to? If so, what kind, and for how long?

16. Has the patient received any medical treatment?

17. State any other particulars of the patient's history, which may have a bearing on the present attack.

FORM FOR PROBATE COURT,

And proceedings in the matter of admission of patients, under Sec. 4 of Amended Act, Chap. CII., May Session, 1867.

To the Hon. Court of Probate of the District of :

The undersigned, First Selectman of the town of respectfully represents that of is an insane person, and is now, and for has been (describe whether pauper or indigent, whether in almshouse, or how kept, &c.) He therefore prays that your Honorable Court will take said matter into consideration, and appoint a physician to visit said insane person, and inquire into and investigate case, according to the Statute Laws of the State of Connecticut in such case made and provided, and upon finding the allegations of this petition to be true, to order said to be taken without delay to the Hospital for the Insane, in the town of Middletown, and State of Connecticut.

Dated 186 at Conn.

(Signed) *First Selectman.*

At a Court of Probate, holden at on the day of 186

Present: Judge.

Upon the foregoing petition and application of irst Selectman of the town of it is ordered that of physician, be, and he is hereby appointed to visit said represented to be insane, to investigate and inquire into case, and make return to this Court of the facts concerning alleged insanity.

Attest, *Clerk.*

To the Hon. Court of Probate in and for the District of :

The undersigned, physician, hereby makes return that in pursuance of an order of this Court, passed on the day of 186 he visited the said at in said represented to be insane, that he made a full and complete investigation of in said case, and is of the opinion that the said is insane, and that the prayer of said petition should be granted.

Dated at this day of 186 .

(Signed) *Physician.*

At a Court of Probate, holden at in and for the District of on the day of

PRESENT: Judge.

Upon the hearing of the petition of First Selectman of the town of setting forth and showing that one an insane person, is now of said and praying, for reasons therein set forth, that may be removed to the Hospital for the Insane, at Middletown, as per petition on file, this Court having investigated the case, and heard the report of the physician duly appointed to examine said case, doth find the allegations of said petition to be true, and it is ordered that the said be removed without delay to the Hospital for the Insane of the State of Connecticut, at Middletown.

Attest, *Clerk.*

FORM OF REQUEST FOR PRIVATE PATIENTS.

To the Superintendent of the General Hospital for Insane, at Middletown, Conn.

The undersigned, of county of State of requests the admission in the Hospital, under your charge, of resident of county of aged who has been (*here state occupation, condition, &c.*) He (or she) is a native of and is (*here state connection or relationship*) of the undersigned.

(*Give here, in writing, a history of the case, when insanity commenced, and by what caused.*)

Dated 186

FORM OF PHYSICIAN'S CERTIFICATE.

I, physician of county of State of hereby certify that I have examined into (or am acquainted with) the state of health and mental condition of of county of State of and that he (or she) is, in my opinion, insane, and a fit subject for the Hospital for the Insane.

Dated 186

(Signed) *Physician.*

FORM OF BOND.

Know all men by these presents, that we, of town of county of State of are held and firmly bound unto Treasurer of the General Hospital for the Insane of the State of Connecticut, located at Middletown, and to his successors in office, in the sum of five hundred dollars, for the payment of which we jointly and severally bind ourselves firmly by these presents.

Whereas, of the town of county of State of an insane person, has been admitted as a boarder in the Hospital for Insane aforesaid; now, therefore, the condition of this obligation is, that if we shall truly pay, during h continuance as such boarder, h board quarterly in advance, and such extra charges as may be occasioned by h requiring more than ordinary care, and for such needful articles of clothing as shall require, which shall be procured by the steward of said Hospital, and shall remove the said when the Superintendent shall give notice of the need or propriety of such removal, from whatever cause, and shall also pay not exceeding fifty dollars for all damages may do to the furniture or property of the Hospital, and also for reasonable charges in the event of death, with interest on each bill from and after the time it becomes due, then this obligation is void, otherwise remains in force.

Dated 186

[L.S.]

[L.S.]

Signed and sealed in presence of

PART OF ACT RELATING TO ADMISSIONS.

"Sec. 4. That whenever any pauper in any town may be insane, it shall be the duty of the first selectman of that town, to make application in his behalf to the judge of probate of the district wherein said pauper resides, for his admission to the hospital, and said judge shall appoint one regular and respectable physician, who shall fully investigate the facts of the case, and if satisfied after such investigation that said pauper is insane, the judge shall issue an order to such first selectman, requiring him, without delay, to take such insane pauper to the hospital, where he shall be kept and supported so long as may be requisite or expedient; and one-half of the expense of his support shall be defrayed by the town wherein said pauper resides, and the other half by the State; and that when a person in indigent circumstances, not a pauper, becomes insane, application may be made in his behalf to the judge of probate for the district wherein he resides, and said judge shall appoint a respectable physician, who shall fully investigate the facts of the case, and if satisfied after such investigation that such indigent person is in indigent circumstances and insane, the judge shall issue an order to the person or persons making such application, directing him or them to take such indigent person to the hospital, where he shall be kept and supported so long as may be requisite or expedient; and one-half of the expenses of his support shall be paid by the State, and the other half by the parties making the application.

" Sec. 5. That the trustees may authorize the superintendent to admit, under special agreements, whenever there are vacancies in the hospital, such cases as may seek admission."

THE

FORTY-FOURTH ANNUAL REPORT

OF THE

OFFICERS

OF THE

RETREAT FOR THE INSANE,

AT

HARTFORD, CONN.,

APRIL, 1868.

HARTFORD:
PRESS OF CASE, LOCKWOOD & BRAINARD.
1868.

OFFICERS

OF THE

RETREAT FOR THE INSANE,

FOR 1868.

Hon. WILLIAM A. BUCKINGHAM, *President.*
WILLIAM R. CONE, Esq., *Vice President.*
THOMAS SISSON, *Treasurer.*
THOMAS BELKNAP, *Auditor.*
JONATHAN B. BUNCE, *Secretary.*

DIRECTORS CHOSEN AT THE ANNUAL MEETING.

WILLIAM T. LEE,
ALFRED SMITH,
JOHN S. BUTLER,
EZRA CLARK,
THOMAS BELKNAP,
CALVIN DAY,
CHARLES GOODWIN,
HORATIO E. DAY,
SAMUEL S. WARD,
GURDON W. RUSSELL,
E. K. HUNT,
OLCOTT ALLEN,
JAMES L. HOWARD,
WILLIAM R. CONE,
THOMAS SMITH,
GEORGE P. BISSELL,
MARK HOWARD,
E. G. HOWE,
J. B. BUNCE,
G. M. BARTHOLOMEW.

MANAGERS.

SAMUEL S. WARD, 23 High Street.
WILLIAM R. CONE, 2 Central Row.
CALVIN DAY, 55 Spring Street.

JOHN S. BUTLER, M. D., *Physician and Superintendent.*
WILLIAM PORTER, M. D., 1*st Assistant Physician.*
CHARLES M. KITTREDGE, M. D., 2*nd Assistant Physician.*
Rev. S. SPRING, *Chaplain.*
JOHN H. CLARKE, *Apothecary.*
Mr. THOMAS H. HOLADAY, *Steward.*
Mrs. THOMAS H. HOLADAY, *Matron.*
Mrs. CLARISSA COOLIDGE, *Assistant Matron.*

VISITING COMMITTEES.

1867.	June,	Messrs.	CLARK, GOODWIN, BELKNAP.
	July,	"	H. E. DAY, ALLEN, J. L. HOWARD.
	Aug.,	"	T. SMITH, BISSELL, M. HOWARD.
	Sept.,	"	HOWE, BUNCE, BARTHOLOMEW.
	Oct.,	"	CLARK, GOODWIN, BELKNAP.
	Nov.,	"	H. E. DAY, ALLEN, J. L. HOWARD.
	Dec.,	"	T. SMITH, BISSELL, M. HOWARD.
1868.	Jan.,	"	HOWE, BUNCE, BARTHOLOMEW.
	Feb.,	"	CLARK, GOODWIN, BELKNAP.
	Mar.,	"	H. E. DAY, ALLEN, J. L. HOWARD.
	April,	"	T. SMITH, BISSELL, M. HOWARD.
	May,	"	HOWE, BUNCE, BARTHOLOMEW.

MEDICAL VISITORS.

N. B. IVES, M. D.,
E. K. HUNT, M. D.,
GURDON W. RUSSELL, M. D.,
P. M. HASTINGS, M. D.,
ISAAC G. PORTER, M. D.,
HENRY M. KNIGHT, M. D.

VISITING COMMITTEE OF LADIES.

Mrs. W. R. CONE,
Mrs. CALVIN DAY,
Mrs. THOMAS SMITH,
Mrs. P. M. HASTINGS.

REPORT OF THE MEDICAL VISITORS.

The Board of Medical Visitors would respectfully report:

That they have continued to make the quarterly and monthly visits as usual for some years past. They have co-operated with the officers of the Institution for the good of the patients, and have made such suggestions as seemed to be demanded.

Some things which were needed will be afforded by the improvements which are now being made, and when completed, we may fairly claim that the Retreat will continue to maintain its high rank among like Institutions throughout the country.

N. B. IVES, M. D.,
E. K. HUNT, M. D.,
GURDON W. RUSSELL, M. D.,
P. M. HASTINGS, M. D.,
ISAAC G. PORTER, M. D.,
HENRY M. KNIGHT, M. D.

HARTFORD, April, 1868.

TREASURER'S ACCOUNT.

Dr. Retreat for the Insane, *in account with* Thomas Sisson, *Treasurer.* **Cr.**

1868. March 31st,	To Cash paid order S. S. Ward, Esq., Chairman of Managers, - -	$72,312.75	1868. March 31st,	By Balance from old account, -	$2,819.49
" "	To Cash paid for Insurance and Stamps,	478.16	" "	By Cash received for support of Patients,	83,537.17
" "	To Cash paid for publishing Reports,	266.10	" "	By Cash received for Interest and Dividends, - - - - -	2,229.05
" "	To Cash paid for Visiting Committee,	60.00	" "	By Cash received for Articles sold, -	434.36
" "	To Cash paid for Library, - -	43.08	" "	By Cash received for Rent of Land,	37.50
" "	To Balance to new account, - -	15,897.48			
		$89,057.57			$89,057.57
			1868. April 1st,	By Balance from old account, -	$15,897.48

Examined and found correct,

T. BELKNAP, *Auditor.*

Hartford, April 9th, 1868.

Hartford, April 1st, 1868.

THOMAS SISSON, *Treasurer.*

THE

FORTY-FOURTH ANNUAL REPORT

OF THE

Superintendent and Physician

OF THE

RETREAT FOR THE INSANE,

FOR THE YEAR ENDING MARCH 31st, 1868.

To the Directors of the Retreat for the Insane:

Gentlemen:—I respectfully present to you the Forty-Fourth Annual Report of the Retreat.

The following table gives a brief view of the numerical results of the past year.

	Males.	Females.	Total.
The whole number of patients in the Retreat at the beginning of the year, was	117	123	240
Admitted during the year,	72	101	173
Total number in the course of the year,	189	224	413
Of this number there have been discharged,			
Recovered,	30	42	72
Much improved,	10	26	36
Improved,	13	15	28
Not improved,	7	7	14
Died,	6	11	17
Total discharged during the year,	66	101	167
Remaining in the Retreat, April 1st, 1868,	123	123	246
Whole number admitted up to April 1st, 1868,	2,254	2,644	4,898
Whole number discharged during same period,	2,131	2,521	4,652
Whole number remaining,			246

TABLE No. I.

GENERAL STATISTICS.

YEAR.	Admitted.	Discharged.	Whole number under care.	Recovered.	Much Improved, not Improved, &c.	Died.	Greatest number in Retreat on any day.	Least number in Retreat on any day.	Remaining at end of year.	Daily average number for the year.	Superintendent.
1824–5	44			10		1					Dr. Todd.
1825–6	33			16		1					“
1826–7	37			24		0					“
1827–8	40			27		4					“
1828–9	42			26		2					“
1829–30	51			28		0					“
1830–1	53			32		1					“
1831–2	80			46		6					“
1832–3	68			37		4					“
1833–4	72			43		3					“
1834–5	72			36		6					Dr. Fuller.
1835–6	73			42		6					“
1836–7	91			55		6					“
1837–8	67			42		10					“
1838–9	94			49		8					“
1839–40	84			50		2					“
1840–1	67			38		9					Dr. Brigham.
Total,		993			323						
1841–2	96	89	179	56	25	8			90		Dr. Brigham.
1842–3	83	76	173	45	24	7			89		“
1843–4	80	86	169	44	33	9	111	78	83	84	Dr. Butler.
1844–5	105	85	188	45	29	11	105	82	103	97	“
1845–6	128	115	231	55	44	16	132	103	116	121	“
1846–7	111	109	227	56	42	11	144	116	118	127	“
1847–8	93	89	211	40	37	12	143	116	122	127	“
1848–9	133	122	225	70	40	12	153	122	133	141	“
1849–50	135	125	268	64	31	30	155	131	143	143	“
1850–1	128	114	271	59	40	15	161	143	157	151	“
1851–2	158	134	315	68	44	22	182	153	181	168	“
1852–3	140	151	321	64	66	21	197	168	170	179	“
1853–4	177	161	347	64	75	22	197	158	186	180	“
1854–5	169	162	355	73	72	17	197	174	193	185	“
1855–6	157	153	350	59	68	26	197	178	197	187	“
1856–7	161	152	358	71	67	14	218	194	206	204	“
1857–8	144	142	350	48	79	15	212	183	208	199	“
1858–9	141	134	349	61	63	10	230	201	215	216	“
1859–60	168	156	383	70	66	20	227	210	227	219	“
1860–1	164	165	391	75	81	9	235	218	226	225	“
1861–2	171	176	397	71	88	17	231	217	221	222	“
1862–3	170	160	391	72	60	28	239	210	231	222	“
1863–4	143	143	374	72	50	21	237	219	231	228	“
1864–5	155	148	386	57	64	27	243	227	238	235	“
1865–6	165	158	403	62	70	26	246	227	245	233	“
1866–7	182	187	427	90	68	29	246	230	240	238	“
1867–8	173	167	413	72	78	17	253	231	246	241	“
Total,	4898	4652		2284	1827	541					

Patients admitted under Dr. Todd, - - - - - - -	520
“ “ “ Dr. Fuller, - - - - - - -	481
“ “ “ Dr. Brigham, - - - - - -	246
“ “ “ Dr. Butler, - - - - - - -	3,651

We began the year with 240 patients, 173 have been admitted since, making the whole number in the house under treatment during the year 413. The daily average for the year has been 241, a larger number than ever before. Of the 167 patients discharged during the year, 72 have recovered, 64 were more or less improved, 14 were not improved, and 17 died. Undoubtedly some of those cases which are reported as recovered, have since relapsed, their return to the evil influences of former exciting causes, the want of judicious care, or more likely, their premature removal, have produced this unfortunate, and evidently avoidable result.

In my own experience, however, at least as many of those discharged, as more or less improved, ultimately recover from the effects of their partial treatment here.

The numbers given in the tables, may be taken therefore, as the correct measure of the real results.

Of the deaths, 11 were females, 4 were males, four of these were from exhaustion from acute mania, one each from marasmus, disease of kidneys, diarrhœa, paralysis, acute meningitis, general debility and disease of lungs, and four from exhaustion from chronic mania.

The percentage of deaths of the whole number resident in the house during the year is, $4\frac{11}{100}$, the percentage of the daily average for the year is $7\frac{05}{100}$.

The general health of our household has been remarkably good, and the number of deaths for the year has been less than the average number for the last 22 years.

Taking into consideration the over crowded state of the house, we have certainly great reason to be thankful to a watchful providence for such pleasant results as the history of the year presents to you. The applications for admission have been so urgent, and the character of the cases presented so extremely severe that it has been impossible for me to prevent this over crowding. From this great embarrassment, and real injury to the best interest of the Institution we shall soon be relieved.

The whole number of patients admitted into the Institution since its opening in 1824, is 4,898. The whole number discharged is 4,652. Of those discharged 2,284 have recovered; only a fraction ($49\frac{9}{100}$) less than 50 per cent. 1,827 were more or less improved, and 541 or ($11\frac{6}{10}$) have died.

TABLE No. II.

MONTHLY ADMISSIONS FROM THE OPENING OF THE RETREAT, APRIL 1ST, 1824.

April,	Males,	185	November,	Males,	183
	Females,	239—424		Females,	202—385
May,	Males,	203	December,	Males,	176
	Females,	259—462		Females,	177—353
June,	Males,	214	January,	Males,	160
	Females,	261—475		Females,	180—340
July,	Males,	225	February,	Males,	170
	Females,	277—502		Females,	159—329
August,	Males,	195	March,	Males,	190
	Females,	226—421		Females,	206—396
September,	Males,	179	Total,	Males,	2254
	Females,	240—419		Females,	2644–4898
October,	Males,	174			
	Females,	218—392			

TABLE No. III.

NUMBER ADMITTED ONCE AND MORE THAN ONCE DURING FORTY-FOUR YEARS.

Admission.	Males.	Females.	Total of Persons.	Total of Cases.
1	1472	1590	3062	3062
2	216	275	491	982
3	50	66	116	348
4	20	31	51	204
5	8	14	22	110
6	4	10	14	84
7	1	5	6	42
8	2	1	3	24
9		1	1	9
10	2		2	20
13	1		1	13
Total,	1776	1993	3769	4898

TABLE No. IV.

NUMBER OF THE ATTACK OF THOSE ADMITTED SINCE MARCH 31ST, 1845.

NUMBER OF ATTACKS.	1845 to 1855. 10 years.		1855 to 1865. 10 years.		1865 and 1866.		1866 and 1867.		1867 and 1868.		Males.	Femal's.	Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
First Attack,	355	487	463	527	48	49	51	72	47	66	964	1201	2165
Second "	96	148	92	143	7	21	9	20	9	15	213	347	560
Third "	27	39	37	51	5	8	1	9	4	7	74	114	188
Fourth "	18	23	5	29	3	5	1	4	4	4	31	65	96
Fifth "	9	9	7	22		3	2	1	1	3	19	38	57
Sixth "	5	6	9	11		1	1		1		16	18	34
Seventh "	2	5	6	10		1			1		9	16	25
Eighth "	1	1	4	3				2			5	6	11
Ninth "		2	2	2		1					2	5	7
Tenth "			2	1						1	2	2	4
Eleventh "			1	1							1	1	2
Twelfth "			1	37							1	37	38
Fifteenth "				24								24	24
Several,	44	42	46	1	6	5	2	5	3	4	101	57	158
Unknown,	29	24	36	1		2		2	2	1	67	30	97
Total,	586	786	711	863	69	96	67	115	72	101	1505	1961	3466

TABLE No. V.

AGE AT THE TIME OF ADMISSION OF THOSE ADMITTED SINCE MARCH 31, 1844.

AGE.	1844 to 1854. 10 years.		1854 to 1864. 10 years.		1864 and 1865.		1865 and 1866.		1866 and 1867.		1867 and 1868.		Males.	Femal's.	Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Under 15 years,	5	3	5	5	2						1		13	8	21
From 15 to 20 yrs.	48	48	52	43	4	4	3	5	7	4	2	4	116	108	224
" 20 to 25 "	84	91	103	132	10	13	7	11	8	18	8	8	220	273	493
" 25 to 30 "	63	107	75	131	7	13	14	12	9	12	7	13	175	288	463
" 30 to 35 "	87	89	82	118	6	10	8	9	5	17	7	11	195	254	449
" 35 to 40 "	57	90	93	103	9	7	12	10	8	17	8	18	187	245	432
" 40 to 45 "	69	78	69	100	7	5	3	9	7	17	11	14	166	223	389
" 45 to 50 "	45	54	52	73	7	8	3	15	6	10	10	6	123	166	289
" 50 to 60 "	59	98	86	103	11	14	9	11	9	12	11	15	185	253	438
" 60 to 70 "	33	49	53	53	7	6	5	12	7	6	4	10	109	136	245
" 70 to 80 "	11	10	33	16	3	1	5	2	1	1	3	2	56	32	88
Over 80 years,	2	3	3	3	1					1			6	7	13
Unknown,	10	15		2									10	17	27
Total,	573	735	706	882	74	81	69	96	67	115	72	101	1561	2010	3571

TABLE No. VI.

DURATION OF DISEASE WHEN ADMITTED OF THOSE ADMITTED SINCE MARCH 31st, 1844.

DURATION.	1844 to 1854. 10 years.		1854 to 1864. 10 years.		1864 and 1865.		1865 and 1866.		1866 and 1867.		1867 and 1868.		Males.	Femal's.	Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Less than 1 month,	120	172	152	212	19	29	14	39	22	32	26	31	353	515	868
From 1 to 3 months	117	149	132	195	10	14	12	19	13	20	15	17	299	414	713
" 3 to 6 "	64	96	108	121	10	7	12	8	5	15	9	10	208	257	465
" 6 to 12 "	53	71	79	81	8	7	11	8	9	16	12	7	172	190	362
" 1 to 2 years,	61	68	52	63	4	4	7	6	10	10	2	11	136	162	298
" 2 to 3 "	40	33	46	53	8	6	4	3	6	8	1	7	105	110	215
" 3 to 5 "	30	29	34	56	3	5	5	5		6	1	7	73	108	181
" 5 to 10 "	34	35	46	42	3	4	2	5	2	5	5	4	92	95	187
" 10 to 20 "	15	34	29	23	3	3	2	2		2		5	49	69	118
Over 20 years,	7	10	4	14	2							2	13	26	39
Unknown,	34	36	24	22	4	2		1		1	1		63	62	125
Total,	575	733	706	882	74	81	69	96	67	115	72	101	1563	2008	3571

TABLE No. VII.

CIVIL CONDITION OF THOSE ADMITTED SINCE MARCH 31st, 1843.

	Single.		Married.		Widowed.		Total.	
	Male.	Fem.	Male.	Fem.	Male.	Fem.	Male.	Female.
1843-53, 10 years,	371	343	243	304	28	92	642	739
1853-63, 10 "	357	387	331	400	32	115	720	902
1863-64,	31	38	22	37	7	8	60	83
1864-65,	35	35	34	36	5	10	74	81
1865-66,	31	38	33	44	5	14	69	96
1866-67,	27	35	38	61	2	19	67	115
1867-68,	34	43	31	41	7	17	72	101
Total,	886	919	732	923	86	275	1704	2117
General Total,		1805		1655		361		3821

TABLE No. VIII.

SUPPOSED CAUSES OF 1,491 CASES ADMITTED SINCE APRIL, 1859.

SUPPOSED CAUSES.	1859 to 1864. 5 years.		1864 and 1865		1865 and 1866		1866 and 1867.		1867 and 1868.		Males.	Fem.	Total.
	M.	F.	M	F.	M	F.	M	F.	M	F.			
Ill health of various kinds,	41	140	9	32	13	36	12	49	16	21	91	278	369
Intemperance, - - -	47	8	10	1	6		4	3	7	6	74	18	92
Intense mental or bodily exert'n	23	29	8	6	5	5	1	4	4	6	41	50	91
Masturbation, - - -	40	9	6		6		7		5		64	9	73
Grief, loss of friends, &c., -	9	33	2	5	1	5	2	6	2	6	16	55	71
Puerperal state, - - -		37		2		7		1		6		53	53
Perplexities in business, -	31	2	2		5		8	1	1	2	47	5	52
Domestic unhappiness, -	8	15	2	3	4	1	1	4	2	1	17	24	41
Religious excitement, - -	9	12		3	3	3	2	3	3	3	17	24	41
Epilepsy, - - - -	17	5	5		1	1	2	2	1	1	26	9	35
Disappointed affections, -	8	15			1	3	3		2	2	14	20	34
Turn of life, - - - -		9		1		6		4		2		22	22
Paralysis, - - -	8	1			4	1	3		1	1	16	3	19
Fever, - - - - -	2	1			1	2		6	2	2	5	11	16
Faramenia, - - -		12		1				1		1		15	15
War excitement, - -	5	5	3		1						9	5	14
Use of opium, - - -	1	5	1	1		1		1	2	1	4	9	13
Fright, - - - -	2	5		2		2					2	9	11
Tobacco, - - -	8				1		1		1		11		11
Spiritual manifestations, -	4	3							1	1	5	4	9
Injuries of head, - -	4		1		1		1		1		8		8
Sunstroke, - - -	1				2		3		1		7		7
Exposure of various kinds, -	3	1									3	1	4
Homesickness, - -		3	1								1	3	4
Want of sleep, - -	3								1		4		4
Bodily injuries, - -	1		1						1		3		3
Disappointed ambition, -		1					1			1	1	2	3
Jealousy, - - -			1				1	1			2	1	3
Sexual indulgence, - -	2										2		2
Repelled cutaneous disease, -	1	1									1	1	2
Political excitement, - -	1								1		2		2
Measles, - - -		1								1		2	2
Erroneous education, - -	1										1		1
Mesmerism, - - -		1										1	1
Fear of poverty, - -		1										1	1
Erysipelas, - - -										1		1	1
Exposure to quicksilver (dressing furs), - - -			1								1		1
Unknown, - - -	84	97	21	24	14	23	15	29	17	36	151	209	357
Total, - - -	364	452	74	81	69	96	67	115	72	101	646	845	1491

TABLE No. IX.

SUPPOSED CAUSE OF INSANITY IN 4,898 CASES ADMITTED SINCE OPENING OF THE RETREAT, WITHOUT DISTINCTION OF SEXES.

Ill health of various kinds,	936	War excitement,	14
Intense mental and bodily exertion,	376	Erroneous Education,	13
Intemperance,	309	Jealousy,	11
Grief, loss of friends, &c.,	241	Fear of poverty,	8
Religious excitement,	237	Homesickness,	8
Masturbation,	188	Sunstroke,	7
Domestic unhappiness,	182	Change of habits,	6
Puerperal state,	166	Sexual indulgence,	5
Perplexities in business,	121	Malformation of brain,	5
Disappointed affection,	114	Mesmerism,	3
Epilepsy,	82	Apoplexy,	2
Paramenia,	48	Political excitement,	2
Injuries of the head,	45	Measles,	2
Turn of life,	41	Disease of heart,	1
Paralysis,	36	Chorea,	1
Exposure of various kinds,	34	Slander,	1
Fever,	31	Ridicule of shopmates,	1
Fright,	23	Self indulgence,	1
Spiritual manifestations,	23	Necrosis,	1
Use of Tobacco,	22	Wakemanite excitement,	1
Repelled cutaneous disease,	20	Erysipelas,	1
Want of sleep,	19	Exposure to fumes of charcoal,	1
Disease of brain,	18	Insufficient nutrition (Grahamism),	1
Disappointed ambition,	17	Exposure to quicksilver (dressing furs)	1
Use of opium,	17	Unknown,	1,424
Millerism,	16		
Bodily injuries,	15	Total,	4,898

TABLE No. X.

OCCUPATION OF 1,657 MALES AND 2,081 FEMALES, EMBRACING THOSE NOW IN THE RETREAT, AND THOSE ADMITTED SINCE APRIL 1ST, 1843.

MALES.

Farmers,	475
Day laborers,	140
Merchants,	133
Clerks,	73
Students,	46
Mechanics,	41
Carpenters,	38
School boys,	38
Shoemakers,	36
Lawyers,	33
Physicians,	31
Teachers,	28
Seamen,	26
Book-keepers,	22
Painters,	20
Blacksmiths,	18
Machinists,	18
Clergymen,	15
Cabinet makers,	12
Speculators,	12
Tailors,	12
Weavers,	11
Soldiers,	11
Tinmen,	11
Iron Founders,	10
Carriage makers,	10
Manufacturers,	10
Masons,	10
Coopers,	8
Hatters,	8
Bank officers,	8
Gun smiths,	8
Jewellers,	8
Printers,	8
Watchmen,	6
Butchers,	6
Millers,	6
Saddlers,	5
Hotel keepers,	5
Burnishers,	4
Sash and blind makers,	4
Silversmiths,	4
Wheelwrights,	4
Engineers,	4
Factory boys,	4
Sailmakers,	4
Ship-riggers,	3
Druggists,	3
Notaries,	3
Woolen-spinners,	3
Harness-makers,	3
Cigar-makers,	3
Boarding-house keepers,	3
Bleachers,	3
Draymen,	3
Clock-makers,	3
Army officers,	2
Ship builders,	2
Express agents,	2
Stone cutters,	2
Comb makers,	2
Restaurant keepers,	2
Architects,	2
Paper makers,	2
Confectioners,	2
Naval officers,	2
Wool carders,	2
Brick makers,	2
Tanners,	2
Plane makers,	2
Coachmen,	2
Artist,	1
Fishmonger,	1
Stock-broker,	1
Varnisher,	1
Wool-dyer,	1
Carver,	1
Contractor,	1
Life insurance agent,	1
Liveryman,	1
Turner,	1
Charcoal burner,	1
Axe shaver,	1
House mover,	1
Editor,	1
Peddler,	1
Auger-maker,	1
Watch-maker,	1
Dentist,	1
Wool sorter,	1
Brass founder,	1
Planter,	1
Engraver,	1
Stereotyper,	1
Tallow-chandler,	1
Ship-caulker,	1
Fisherman,	1
Nurseryman,	1
Book-binder,	1
Musician,	1
Button-maker,	1
Barber,	1
Stage proprietor,	1
Marketman,	1
Collector,	1
No occupation,	61
Unknown,	58
Total,	1,657

FEMALES.

Domestic pursuits,	1419
Domestics,	131
Teachers,	94
Seamstresses,	68
Factory girls,	48
School girls,	40
Tailoresses,	22
Milliners,	18
Carpet weavers,	8
Nurses,	5
Clerks,	3
Paper box makers,	2
Laundress,	1
Shoe-binder,	1
Hat-trimmer,	1
Book-binder,	1
Button maker,	1
No occupation,	155
Unknown,	63
Total,	2,081

TABLE No. XI.

AGE AT THE TIME OF FIRST ATTACK OF THOSE ADMITTED SINCE MARCH 31ST, 1845.

AGE.	1845 to 1855. 10 years.		1855 to 1865. 10 years.		1865 and 1866.		1866 and 1867.		1867 and 1868.		Males.	Femal's.	Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Under 15 years,	26	12	27	15	2	2		1	3		58	30	88
From 15 to 20 years,	85	107	86	104	5	11	9	14	5	12	190	248	438
" 20 to 25 "	106	142	122	170	12	18	8	15	12	12	260	357	617
" 25 to 30 "	77	131	84	161	12	16	11	22	9	16	193	346	539
" 30 to 35 "	71	84	92	84	9	10	7	14	7	16	186	208	394
" 35 to 40 "	38	84	65	80	6	9	8	15	7	11	124	199	323
" 40 to 45 "	39	56	46	77	5	6	6	9	7	13	103	161	264
" 45 to 50 "	29	33	48	36	3	7	9	6	9	6	98	88	186
" 50 to 60 "	30	53	56	47	7	8	4	11	8	6	105	125	230
" 60 to 70 "	22	19	26	30	4	4	5	3	2	5	59	61	120
" 70 to 80 "	8	6	16	11	2					1	26	19	45
Over 80 years,		1	1	1				1			1	2	3
Unknown,	55	58	42	47	2	5		4	3	3	102	117	219
Total,	586	786	711	863	69	96	67	115	72	101	1505	1961	3466

TABLE No. XII.

MONTHLY DISCHARGES SINCE MARCH 31ST, 1844.

DISCHARGE.	1844 to 1854. 10 years.		1854 to 1864. 10 years.		1864 and 1865.		1865 and 1866.		1866 and 1867.		1867 and 1868.		Males.	Femal's.	Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
April,	38	45	60	88	3	7	3	12	7	12	4	6	115	170	285
May,	36	37	76	93	5	5	10	12	10	11	5	12	142	170	312
June,	46	41	55	100	8	7	4	11	7	9	9	8	129	176	305
July,	42	54	70	72	7	5	10	6	6	8	7	12	142	157	299
August,	64	83	53	63	7	8	7	4	8	9	6	12	145	179	324
September,	44	75	56	52	6	10	2	5	9	8	5	12	122	162	284
October,	43	58	68	81	5	7	12	8	6	11	6	12	140	177	317
November,	54	55	43	70	7	6		9	3	7	5	6	112	153	265
December,	41	64	42	62	6	5	3	5	4	7	1	7	97	150	247
January,	33	32	46	57	5	5	3	3	5	11	5	6	97	114	211
February,	37	45	36	54	5	6	2	12	5	14	7	3	92	134	226
March,	53	85	73	73	8	5	7	8	5	5	6	5	152	181	333
Total,	531	674	678	865	72	76	63	95	75	112	66	101	1485	1923	3408

During the present month, the State beneficiaries among our male patients will be removed to the new State Hospital at Middletown, and those among our female patients will follow within the year.

As was anticipated in our last report, this removal of the State beneficiaries will now give the Directors of the Retreat the opportunity they have so long desired of remodeling and improving the Institution. The operations of the Retreat will then revert to the original object of its founders,—the providing amply for all classes of the insane,—spacious and handsome accommodations for those whose tastes, habits and ability require them, with liberal arrangements for the indigent, especially for that class who having seen better days, retain amid their pecuniary reverses their full appreciation of the refinements and of that larger measure of the comforts, not to say luxuries, of life, which have been associated with those refinements.

These new arrangements will not only free us from those annoyances to which for some years past we have been subjected from the anomalous condition of the institution, but will provide those abundant means for distinct classification which the peculiarities of the insane render so essential to the pleasant working of such a hospital.

The changes which are contemplated both in its external appearance and in the internal arrangements, will mark one of the most important eras in the history of the Retreat.

It is interesting in this connection to look back upon our records, and briefly note the principal of those changes in the buildings of the Retreat, which have been made at different periods. In the Report of the "Society for the relief of the insane, the institution located at Hartford, Conn., made to the annual meeting at Hartford, the 2d Wednesday of May, 1823," we find, first, the act of incorporation establishing a "Retreat for the Insane," from which we quote the opening paragraphs:

"At a General Assembly of the State of Conn.,—

Upon the petition of Thomas Hubbard and others showing that there are now more than one thousand insane persons in this State, that a subscription has been opened to provide them an Asylum or Retreat, to mitigate their sufferings and restore them to reason: praying for an act of incorporation and a grant from the treasury in aid of the benevolent object as by petition on file appears;

Resolved by this Assembly: That Thomas Hubbard, Thomas Robbins, Thomas Miner, Samuel Carter, William Tully, Earl Swift, Samuel B. Woodward, John Caldwell, Isaac Spencer, Thomas Day, and their associates and successors, be, and hereby are ordained, constituted and declared to be forever hereafter one body politic and corporate in fact and in name, by the name and style of 'The President and Directors of the Retreat for the Insane.'"

Then follow the list of officers, the report of the Treasurer, and then the "Report of the Committee on the Progress of the Institution." We learn from this report that "the attention of the public in this State was first turned to the subject of the insane by the Medical Society, in their session of October, 1812. A committee was at that time appointed by the Society to ascertain the number of lunatics within the State, and to report. The returns to these inquiries were very imperfect, and nothing further was done until the spring of 1821, when the number of recent cases of insanity, especially in Hartford and its vicinity, led the physicians of the neighborhood again to attend to the subject.

At the meeting of the medical convention in May, Doctors Eli Todd, Thomas Miner, and Samuel B. Woodward, were appointed a committee to take the subject into consideration, and to report upon the expediency of establishing a Retreat for the comfort and restoration of the insane."

The impulse given by the intelligent and energetic action of this committee, resulted in the location and erection of the first building, which is thus described in this report:

"The site selected for the buildings of the Retreat is distant south-westerly about one and a quarter miles from the State House in Hartford. The grounds (17 acres) fronting on the Berlin turnpike, east, present from the beautiful elevation of their western limits an interesting prospect of the country eastward, with a partial view of Hartford and Wethersfield to the north and south. On this elevation a building is erecting. Its center, fifty feet square, to be three stories above the basement, with a north and south wing, each fifty feet by thirty, to be two stories above the basement. The walls are constructing of stone, to be covered with white cement or rough cast. Expense of the buildings not to exceed twelve thousand dollars."

The first patient was received into the Retreat on the first day of April, 1824. At this time there were in the United States only four other lunatic hospitals, all containing less than 200 patients.

The first enlargement of the building was made in 1832. In the 7th Report, for the year 1831, it is stated that there are 57 patients in the Retreat. That accommodations remain for only two or three more, and that applications for the admission of patients have been numerous. The report goes on to say: "This state of things very clearly indicates that public sympathy as well as the affectionate solicitude of friends is awakening to the misery of those who are suffering under perhaps the severest dispensation of Providence.

Acting in view of these facts, the directors at a recent meeting, appointed a committee to inquire into the expediency of enlarging the accommodations for the reception of patients, and also to examine improvements recently adopted in other similar institutions."

In 1832, the Directors report that in accordance with the views of the committee of investigation appointed as intimated in the last report, they have at an expense of about ten thousand dollars ordered the erection of rooms for the future accommodation of patients at the Retreat, consisting of two pavilions three stories high, two wings connecting them with the original building, making an addition of one hundred and four feet of front, and comprising upward of fifty separate apartments, which are now ready for the reception of patients. The entire building will now furnish ample accommodations for one hundred patients. It has been erected at a cost, including the first purchase of land and furniture, considerably exceeding the sum of $30,000.

In 1840, the Directors of the Retreat adopted the following resolution: "Resolved, that all indigent persons, citizens of the State, and proper subjects for such an institution, shall be received and supported at the Retreat for the Insane for a sum not exceeding $2.50 per week."

At the session of the General Assembly in May, 1842, a resolution was passed appropriating a sum not exceeding $2,000 a year for the support of such number of insane poor persons whose parents and guardians are unable to bear all or any part of their expense at the Retreat, as the Governor of the State may deem expedient.

The result of these and other movements was an increased demand for the admission of patients, and the consequently necessary extension of the buildings. In 1844–5 two wings were erected at an expense of $22,000, giving accommodations for one hundred additional patients. Various minor improvements have since been made, largely improving the accommodations and pleasantness of the institution, but not increasing its proper capacity, which has never exceeded two hundred patients.

We come now to a change, and to an advance greater and of more momentous importance than any which has hitherto marked the history of the Retreat.

The removal of the State beneficiaries and the diminution of over numbers has now given the Board the opportunity of making that renovation of the institution which it has long desired, and to which you are in reality compelled by the exigencies of your situation and by the duties which the necessities of the community place upon you.

It was very evident that the time for action had been providentially presented to us; that the Retreat as at present constructed could neither compete with the lower rates of board of institutions supported by the State, or with the handsome and suitable provision for the better classes found in other private institutions; that to be idle, and let the present moment pass by in inaction would be to let others snatch advantages from us which we might never regain, and would be sacrificing the best interest of the noble charity in our charge. In view, therefore, of all the relations of our position, the action of your Board is eminently wise and liberal, and will, I am confident, lead to results satisfactory to all.

For the information of our friends and the public, I will here state that the Board of Directors submitted the many questions growing out of the proposition to remodel the buildings of the Retreat, to the celebrated hospital architects Messrs. Vaux, Withers & Co., of New York, and employed them to furnish us with plans for such changes and reconstructions as they deemed advisable and within our means. The plans which they have given us propose very radical changes in the buildings, both externally and internally; they have been unanimously adopted by the Board, and contracts have been made to carry them out. The work will only embrace the center building and north wing this summer, leaving the south wing, which will then be vacated by our (female) State beneficiaries, till the spring of '69.

These plans and the external and internal changes they present will be given more in detail at some future time. They meet our necessary requirements most successfully and admirably. While the various difficulties which always attend the remodeling of an old house and adapting it to modern taste and necessities have been most ingeniously and happily overcome, the introduction of all essential improvements has been as ingeniously and happily effected. The Retreat thus reconstructed, with these improvements added to the other advantages which it possesses, will then bear a much more favorable comparison than now, with the leading lunatic hospitals in the country.

In conclusion, let me ask your indulgence for a few reminiscences which seem to me naturally suggested by my relation to the Institution, which may not be without interest to you.

The past year concludes my twenty-fifth year of service as Superintendent of the Retreat. I was elected the 13th of May, 1843.

During this quarter of a century I have admitted 3,651 patients, making the whole number under my care 3,740. Of these I have discharged 3,494, of whom 1,583 had recovered. At this period (1843,) the buildings embraced only the center building, those we call dormitories, which were then a series of small rooms with a narrow corridor, the blocks, or the extension of the dormitories, and the old lodges North and South. The capacity of the whole was about 100 patients. The style of accommodations, with the exception of a few rooms in the center building, was of the most plain and primitive character.

Besides those which I have enumerated, I need not enlarge upon the many other changes and improvements which during this period have been made from time to time in and about the Institution; you are familiar with them and the large influence which they have exerted upon its usefulness and prosperity. There are however other and personal changes which have marked this period, which I can not pass by in silence. I am moved to their mention by many most cherished sentiments of profound respect, of high esteem and of warm personal regard. I allude to those members of the Governing Board, who during this period of 25 years have been removed by death. The list of names, 38 in number, is, I think, singularly large; it may truly be called a Roll of Honor, for it brings before us the names of many who are identified with that large measure of personal worth, philanthropic effort and earnest Christian life which adorns the history of our town and city.

I give the names, not in the order of their election to office, nor of their decease, but as they occur in our reports.

PRESIDENTS.

Right Rev. THOMAS C. BROWNELL,
Hon. THOMAS S. WILLIAMS,
Hon. WILLIAM W. ELLSWORTH.

VICE PRESIDENTS.

DAVID WATKINSON,
SAMUEL TUDOR,
WILLIAM H. IMLAY,
HENRY L. ELLSWORTH,
CHARLES SIGOURNEY,
GEORGE GOODWIN,
ELIAS PERKINS.

Directors.

Daniel Wadsworth,
Ward Woodbridge,
Robert Watkinson,
James H. Wells,
Daniel Buck,
Henry Hudson,
Reuben Langdon,
Henry Seymour,
James Ward,
Joseph Trumbull,
George Sumner,
John Butler,
T. H. Gallaudet,
Charles Sheldon,
Isaac D. Bull,
J. L. Comstock,
Edward P. Terry,
Roderick Terry,
Cyprian Nichols,
Gaius Lyman,
Thomas Day,
John M. Niles,
Amos M. Collins,
Nathan Johnson,
Thomas Robbins,
A. W. Butler,
Russell G. Talcott,
William L. Collins.

Our late President Judge Ellsworth, is the last upon this list of our departed associates. He was one of the original donors to the Institution, and had been in the direction from the first organization of your board, having been one of the first board of "officers of the Retreat" elected in 1823. Since the death of our late excellent friend Robert Watkinson, Esq., he was the only surviving member of that original board, no one of whom now remains. In the just and appropriate language of the resolves adopted at his decease by the Board of Directors, Judge Ellsworth "was for many years an active and influential member of the board, and always deeply interested in whatever pertained to its usefulness and success." Robert Watkinson also was one of the original donors and a member of the first board of officers. He continued in the direction till his death. He ever kept a close watch over the workings of the Institution, taking a cordial practical interest in all our improvements and especially in the laying out of the grounds, towards which he gave liberally.

We give hearty thanks to our friends for the many tokens of their kind interest in the welfare and comfort of our patients which we have received during the year.

We have received copies of the Waterbury American, Hartford Weekly Courant, Mystic Pioneer, Columbian Weekly Register, and also files of exchanges from the offices of the Hartford Daily Post, Courant and Times. From the American Tract Society, "The Child at Home," and "The Christian Banner," twenty copies of each monthly. We are also indebted to a lady friend for a most welcome donation of $100 towards the purchase of a piano for Amusement Hall, as also to Mr. L. Barker for a donation of $50 for the same object. To Mr. J. W. Munson of Bridgeport, for a beautiful piano cover; and to Dr. S. Spring for the gift of a Bible; to C. H. Merritt, Esq., for a beautiful chromo-lithograph, and to a friend $30 for a set of billiard balls. Our indebtedness is also due to young ladies of Mr. Curtis's school for two concerts which they gave us, as also for one by the South church choir; to Messrs. H. & G. Williams for evergreens for the decoration of our house, and to Messrs. Seyms & Co. for a barrel of oranges for our Christmas party, for which they received as usual many hearty wishes for a merry Christmas. To Mr. Dudley Buck and C. W. Huntington for ten tickets of admission to the Opera of Stradella.

My thanks are especially due to Dr. Porter, who has been for so many years identified with the Retreat, and to Mr. and Mrs. Holaday and the other officers, medical and otherwise, for their cordial coöperation and efficient assistance in the peculiar responsibilities and labors of the past year.

Our excellent chaplain, Rev. Dr. Spring, has continued his useful duties with but slight and unavoidable interruptions. Every year increases our appreciation of the value of his services, while it also increases the power of his beneficent influence over our whole family.

Respectfully submitted,

JOHN S. BUTLER.

RETREAT FOR THE INSANE,
HARTFORD, April 1, 1868.

CHAPLAIN'S REPORT.

To those who look for variety or remarkable incidents in the annual report of the religious department of this institution, its presentation can only be a disappointment. Our services move, almost continually, upon the surface of calm and unagitating occurrences. The sameness of chapel exercises from Sabbath to Sabbath and from day to day, precludes the expectation of novelty, and so their rehearsal declines to minister to a kindred taste. The gospel message, like the salvation which it proclaims, must be distinguished for its simplicity. Its one object is to restore the lost image of God to the soul of man. It is commissioned to speak of sin and its forgiveness; of want and its supply; of sorrows and their alleviation; of ill-desert and its removal, by a divinely appointed mediation. It recognizes one wide spread malady, and commends one, and but one, heavenly Physician.

For this reason the report of your chaplain admits of scarcely any diversity from those which preceded it. He can only tell you of sermons preached, of prayers offered, of hymns sung, of funerals attended, and of services rendered in private, like those which have gone before, ever since the discovery was made that religion is the handmaid and natural ally of medical skill, and that a "mind diseased" may be happily ministered to by the truths which He taught, and the spirit He illustrated, whose distinguished characteristic it was that He "brake not the bruised reed, and quenched not the smoking flax."

The year that has just closed has presented nothing unusual either in our services or their results. My work has kept on in its accustomed course, has been kindly received, and I trust has not been without its benefit to our afflicted friends here. Their expressions of complacent regard have more than satisfied me; they have imparted a cheering and animated impulse in my poor endeavors to do them good. Abundant evidence has been afforded that the consolations of the gospel have been appreciated by them, and have sometimes diverted the sadder current of their thoughts into a more cheerful and hopeful channel. If they have been in any measure auxiliary to the fidelity and skill employed here, the praise is due, not to the manner of their presentation, but to His wisdom and grace who has adapted them to the necessities of the human mind and heart even in its most depressed and calamitous condition.

As heretofore, my thanks are due and are gratefully tendered to the officers, attendants and nurses of the institution for the kind assistance they have freely offered at all times. May the smiles of heaven rest upon the enterprise, and the blessing of many ready to perish follow those whose wealth and efforts are consecrated to so noble and needful a work.

S. SPRING.

HARTFORD, April 1, 1867.

APPENDIX.

ADMISSION OF PATIENTS INTO THE RETREAT FOR THE INSANE, AT HARTFORD.

No patient admitted for a shorter time than three months; and payment for *that term only* is to be made *in advance to the Treasurer or a Manager.*

Subsequent expenses are to be paid quarterly to the *Steward.*

If the patient is removed *uncured,* before the expiration of thirteen weeks, and contrary to the advice and consent of the Superintending Physician, board is always required for that period; but if the patient recovers before the expiration of the period paid for, or leaves with the full approbation of the Physician, the excess is refunded.

Letters relating to the quarterly bills and clothing should be addressed to Mr. THOMAS H. HOLADAY, the Steward. Clothing and packages sent for the use of the inmates should be sent to the care of the Steward.

All letters in relation to the situation and health of the patients, &c., &c., will, of course, be addressed to Dr. JOHN S. BUTLER, the Superintendent.

Application for admission should be made to Dr. Butler, the Superintendent, *previous to the patients being brought to the Retreat,* in all cases. A brief statement of the case should accompany the application. The particular attention of Physicians is called to this regulation, as during the year past a number of patients, who from the crowded state of the Institution could not be received, have been brought here under the erroneous impression that no previous notice was required. It is sometimes necessary to discharge quiet and incurable cases to make room for violent and curable ones.

Form of Certificate and Request, which the friends of patients are requested to present with the application for their admission.

CERTIFICATE OF PHYSICIAN.

I hereby certify that I have seen and examined M————————, of——————, and believe h to be insane.

—————— —————— M. D.

————————— ——— 186 .

REQUEST FOR ADMISSION.

To be signed by a guardian, near relative or friend.

I request that M——— ————, of———— ————, may be admitted as a patient into the Retreat for the Insane.

———— ————.

————— ———, 186 .

FORM OF BOND.

Upon the admission of of into the Retreat for the Insane, at Hartford, I engage to provide or pay for a sufficiency of clothing for use, and to pay to the Treasurer of the said Institution dollars per week for board, medicine and medical attendance; and also to pay the expense of a separate attendant, if the Superintendent shall deem one necessary; to make compensation for all damages done by to the property of the Retreat; to pay reasonable expenses for pursuing in case of elopement; cause the said patient to be removed when discharged; and in the event of death, to pay the expenses of burial.

Principal.

For value received, I hereby engage to be responsible for the fulfillment of the above stipulations.

Surety.

Hartford, Conn., 18

Approved by

FORM OF BEQUEST.

ITEM. I give and bequeath to the CONNECTICUT RETREAT FOR THE INSANE, in the city of Hartford, the sum of———————dollars, to be paid by my executors out of my real or personal estate, as soon as the settlement of my affairs will permit, to the Treasurer of the said Institution for the time being, in trust, to be applied by the Directors thereof to the humane purposes of said Institution.

VISITORS.

The Managers of this Institution, aware of the interest generally felt in its prosperity, which is naturally connected with a desire to visit its inmates and inspect its internal arrangements, are convinced that the welfare of the patients and the duties of its officers require that such visitation should be subject to the following regulations:—

I. The Institution will be open for Visitors (Sundays excepted) from two to four o'clock in the afternoon.

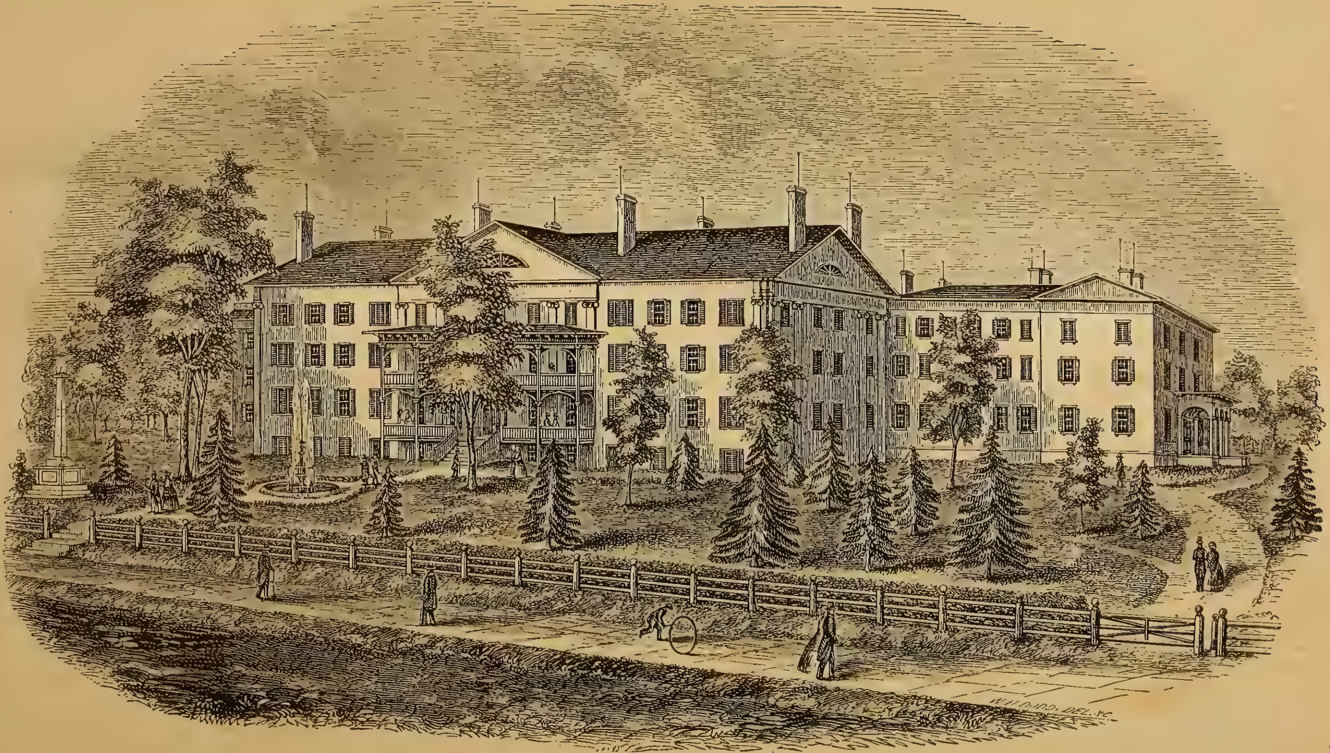
II. All visitors, except persons having business at the Retreat, will be required to provide themselves with tickets for admission, from the Managers or the Treasurer, either of whom will grant the same, unless their knowledge of circumstances make it, in their judgment, necessary to refuse.

MANAGERS.

S. S. WARD, 23 High Street.
WM. R. CONE, 2 Central Row.
CALVIN DAY, 55 Spring Street.

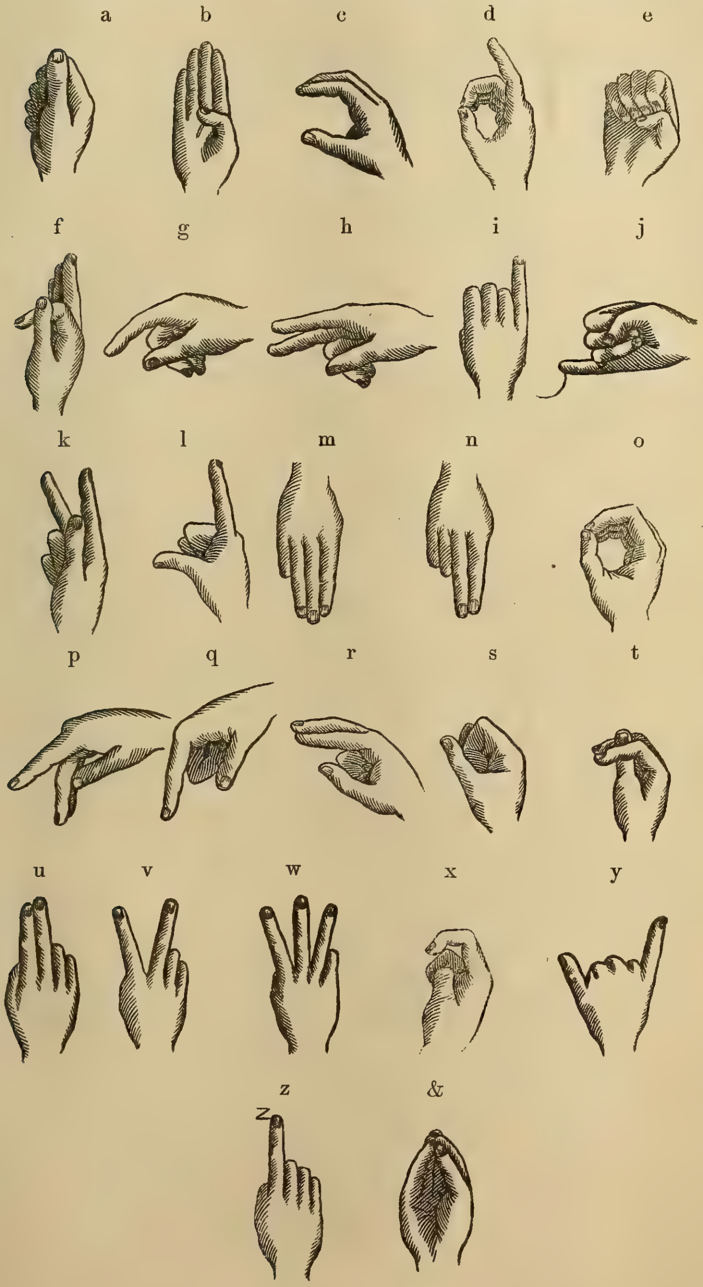
TREASURER.

THOMAS SISSON, 259 Main Street.


W. H. DODD. DEL. SC.

AMERICAN ASYLUM.

ALPHABET OF THE DEAF AND DUMB.



THE

FIFTY-SECOND ANNUAL REPORT

OF THE

Directors and Officers

OF THE

AMERICAN ASYLUM,

AT HARTFORD,

FOR THE

EDUCATION AND INSTRUCTION

OF THE

DEAF AND DUMB.

PRESENTED TO THE ASYLUM, MAY 16, 1868.

HARTFORD, CONN.:
WILEY, WATERMAN & EATON, STEAM BOOK AND JOB PRINTERS.
1868.

Board of Directors.

PRESIDENT.

Hon. CALVIN DAY.

VICE-PRESIDENTS.

JAMES B. HOSMER,
BARZILLAI HUDSON,
CHARLES GOODWIN,
JOHN BEACH,
HENRY A. PERKINS,
SAMUEL S. WARD,
ROLAND MATHER,
NATHANIEL SHIPMAN.

DIRECTORS.

(By Election.)

LEONARD CHURCH,
LUCIUS BARBOUR,
GEO. M. BARTHOLOMEW,
JOHN C. PARSONS,
PINCKNEY W. ELLSWORTH,
ERASTUS COLLINS,
JONATHAN B. BUNCE,
OLCOTT ALLEN,
ROWLAND SWIFT,
FRANCIS B. COOLEY.

EX-OFFICIO.

His Excellency, JOSHUA L. CHAMBERLAIN, Governor of Maine.
Hon. F. M. DREW, Secretary of State.
His Excellency, WALTER HARRIMAN, Governor of New Hampshire.
Hon. JOHN D. LYMAN, Secretary of State.
His Excellency, JOHN B. PAGE, Governor of Vermont.
Hon. GEORGE NICHOLS, Secretary of State.
His Excellency, ALEXANDER H. BULLOCK, Governor of Massachusetts.
Hon. OLIVER WARNER, Secretary of State.
His Excellency, AMBROSE E. BURNSIDE, Governor of Rhode Island.
Hon. JOHN R. BARTLETT, Secretary of State.
His Excellency, JAMES E. ENGLISH, Governor of Connecticut.
Hon. LEVERETT E. PEASE, Secretary of State.

SECRETARY.

JOHN C. PARSONS.

TREASURER.

ROLAND MATHER.

Officers and Teachers.

PRINCIPAL.

REV. COLLINS STONE, M. A.

INSTRUCTOR OF THE GALLAUDET SCIENTIFIC SCHOOL.

JOHN C. BULL, M. A.

INSTRUCTORS.

DAVID E. BARTLETT, M. A.
JOHN R. KEEP, M. A.
RICHARD S. STORRS, M. A.
EDWARD C. STONE, M. A.
JOB WILLIAMS, M. A.
ABEL S. CLARK, B. A.
WILSON WHITON.
WILLIAM H. WEEKS.
MARY A. MANN.
SARAH W. STORRS.
CATHARINE BLAUVELT.

TEACHER OF DRAWING.

MISS LOUISE STONE.

ATTENDING PHYSICIAN.

E. K. HUNT, M. D.

STEWARD.

HENRY KENNEDY.

ASSISTANT STEWARD.

SALMON CROSSETT.

MATRON.

MRS. PHEBE C. WHITE.

ASSISTANT MATRONS.

MRS. REBECCA A. CADY.
MISS NANCY DILLINGHAM.

RUFUS LEWIS, MASTER OF THE CABINET SHOP.
WILLIAM B. FLAGG, MASTER OF THE SHOE SHOP.
MISS MARGARET GREENLAW, MISTRESS OF THE TAILORS' SHOP.

REPORT OF THE DIRECTORS.

To the Patrons and Friends of the American Asylum.

Since the Asylum has entered on the second half century of its existence, we have been frequently called to deplore the death of some of its earliest friends. But seldom has any loss been so marked and irreparable as that which we have suffered by the death of our late President, Hon. William W. Ellsworth, in January, 1868. His election to the office was not a tribute simply to his abilities, his honored name, his political and judicial positions, his ripe age or his moral worth, though all these claims he had to our reverence and esteem.

But he had been, from its inception, a warm and devoted friend of the Asylum. He was its first Secretary. He was then a Director. Retiring from the Board under the pressure of professional and political life, he was again brought into official relations with the Institution, while for four years Governor of this State. When in 1862, the office of President was vacated by the death of Judge Williams, it seemed naturally and fitly to devolve upon Judge Ellsworth. His associates in this body will not soon forget with what dignity, conscientiousness, and earnestness, he discharged his duties as President. A copy of the resolutions on the occasion of Judge Ellsworth's death, passed at an informal meeting of the Directors, is appended to this Report.

At the annual meeting of this Corporation in 1867, its by-laws were so amended as to constitute the Governors and Secretaries of all the New England States *ex-officio* members of the

Board of Directors. The doubt then expressed, whether non-resident Directors would find it practicable to attend our meetings, has been confirmed. But these gentlemen have generally manifested by letter, or in personal interviews with the Principal and pupils, or by visits at the Asylum, such a warm interest in its welfare, as greatly to gratify and encourage the officers, instructors and pupils of the institution.

No special or extraordinary action on the part of the Board has been required since our last Report. All the departments of supervision and instruction have been satisfactorily filled, and the accompanying Reports show the results of patient labor in a year of unusual prosperity.

To the Report of the Treasurer, should be added the fact that the Asylum is still deprived of any income from its Phœnix Bank stock. We regret that no settlement of the questions in dispute has yet been reached, but think we may reasonably anticipate an adjustment at an early day.

In behalf of the Directors,

JOHN C. PARSONS, *Clerk.*

Hartford, May 9th, 1868.

RESOLUTIONS.

At an informal meeting of the Directors of the American Asylum at Hartford, for the Education and Instruction of the Deaf and Dumb, held at their office on the 18th day of January, A. D. 1868, James B. Hosmer, Esq., Senior Vice President in the chair,

THE FOLLOWING RESOLUTIONS WERE ADOPTED.

God in his Providence having removed by death the Hon. William W. Ellsworth, the President of this Society, and one of the original corporators of the Asylum,

Resolved, That as members of this Board, we are called upon in his decease, to mourn the loss of one of the earliest and most efficient friends of the important charity committed to our care; one whose intelligent interest, active labors, and wise counsels have contributed largely to the career of usefulness and beneficence with which the Institution, during fifty years of its history has been crowned.

Resolved, That we desire to place on record our profound appreciation, derived from long and intimate association with the deceased, of his eminent ability, his spotless integrity, his sound judgment, his warm sympathies, his genial christian courtesy, and of the rare purity, simplicity and nobleness which adorned his character, and shone forth in all the relations of his useful life; and while we feel his removal as a deep personal bereavement and a great public loss, we yet recognize the fact, that, as ripened grain, he has been gathered, full of years and honors, to his rest and reward.

Resolved, That in testimony of our respect for his memory, we will attend his funeral in a body; that the clerk be directed to enter these resolutions upon the records of the Board, and to transmit a copy of the same to the family of the deceased, and to furnish a copy to the newspapers of the city for publication.

J. C. PARSONS, *Clerk.*

REPORT OF THE PRINCIPAL.

To The Board of Directors:

Gentlemen:—The number of pupils in attendance at the date of my last Report, was two hundred and twenty-four. Forty-one new pupils have been admitted during the year, and one former pupil, making the whole number under instruction two hundred and sixty-six. Forty-one have left the school, and the number now present is two hundred and twenty-five. These are arranged in thirteen classes, under eight hearing, and five deaf-mute teachers, giving each class an average of seventeen pupils.

While the general health of the family has been excellent, we have to record the death of two interesting pupils, Myron W. Day, of South Royalston, Mass., and Alvah H. Harris, of Neponset, in the same State. The former died on the 13th of May, 1867, from congestion of the lungs, following an attack of measles, and the latter on Feb. 18th, 1868, from erysipelas. Both were bright, promising boys—successful in their studies, and loved by their teachers and companions. In the bloom of youth they were suddenly called away; yet we indulge the hope that the instruction they were permitted here to receive served to prepare them for that unknown future they have so unexpectedly entered. Mr. Arthur H. Whitmore, who had been a member of our corps of instructors somewhat less than a year, died from quick consumption on the 26th of August last. Mr. Whitmore, after teaching for a year in the Pennsylvania Institution, entered upon his duties here with characteristic ardor, and proved himself a skillful and faithful instructor. He was a young man of pure and lovely character, and of great promise, and his early death is a serious loss to the profession.

The position thus rendered vacant was filled by the engagement of Mr. Abel S. Clark, a graduate of Yale, of the class of 1867, who, by the successful experiment of several months, has already shown a gratifying and satisfactory degree of aptness for his new work.

The arrangements for securing the health, comfort and education of so large a family as ours, necessarily involve the most careful attention. There are so many families personally interested in these arrangements, that a detailed narration of the daily routine of our household may not be unacceptable. The pupils, called by one of their number, rise at 5 o'clock in summer, and at 6 o'clock in winter. Breakfast is served at half-past six, the time before breakfast in summer being devoted to amusement. At seven the boys repair to the shops (of which we have three, a tailor's, cabinet and shoe-shop,) where they are occupied till a quarter before nine. The larger girls, divided into four sections, engage in domestic duties. One class clear the tables, wash the dishes in the dining hall, and make the beds; one sweep the school rooms and halls; a third go to the laundry, while a fourth engage in plain sewing, and mending their own garments. These divisions alternate in their several duties once a month. The pupils under twelve are excused from these arrangements, and after committing a short lesson spend the time in amusement. At a quarter before nine the boys leave the shops and prepare themselves for school. At five minutes before nine the pupils, under the charge of a monitor, quietly, and in perfect order, proceed to the chapel. The service is conducted by the principal, or one of the instructors, and occupies about fifteen minutes. A text of scripture is written in large characters upon a slate, so as to be visible from all parts of the room. This is explained and commented upon in a simple and practical manner, and a brief prayer is offered. The entire exercise is in pantomime, or the natural sign language of the deaf-mute, is intelligible to nearly all in the room, scarcely excepting the youngest, and brief, simple and practical, is one of great interest and profit to the pupils. The profound stillness of the company, the fixed attention, and the intelligent appreciation of the course of remark, as indicated by the frequent response of the eye and head, are very impressive to those who witness the exercise for the first time.

Making careful note of the chapter and verse of the text explained, the pupils repair, in order, to the school rooms for the instructions of the morning. These are interrupted at half-past ten by a recess of fifteen minutes, and at 12 o'clock they go to the dining room. The meal is eminently a social one, the diet is abundant, varied and acceptable. After dinner comes amusement, always in the open air, when the weather will allow. At two o'clock school reassembles, and continues till four, when the pupils go again to the chapel, in the same order as in the morning. Meantime the text explained has been committed to memory, and is spelled on the fingers by one of the boys, and also by one of the girls, prayer following, and the exercise occupying about ten minutes. The pupils are then dismissed, and the boys go again to the shops, where they remain till a quarter before six. All the girls engage for the same time in plain sewing, dress-making, knitting, etc. Tea comes at six, and from tea till study-hours—seven in winter, and till time to light the gas in summer, is spent in playing, walking or conversation. The younger pupils go to bed at seven, and the older pupils spend an hour in study under the care of an instructor. At half-past nine all retire. On Saturday we have no school, but the boys work in the shops till eleven o'clock and the girls are busied in sewing. Then follows the bathing, every pupil having a thorough warm bath at least once a week. The afternoon of Saturday is spent in visiting objects of interest in the city, excursions to the woods, or games upon the grounds of the Institution. The boys are supplied with balls and quoits, and with skates and sleds in their season, and often become quite expert in chess and checkers. The girls have jumping-ropes, swings, sea-saws, hoops, croquet, with sleds and skates. The little boys, when out of school, are under the constant supervision of the Assistant-Steward, who sees to their daily ablutions, mingles in their sports, and devotes himself to their comfort and happiness. The Matron and one of the Assistant-Matrons have special charge of the girls when out of school, with the care of their clothing, while the other Assistant superintends the kitchen department, and house arrangements. The girls cut and make their own dresses and under-garments, do their own mending, make all the sheets, tablecloths, towels and napkins, and boys' shirts, and knit all the socks that are furnished the pupils. In the tailor's shop the little boys become expert in the use of the needle, and make jackets and pants. The boys in the cabinet shop not only learn the use of tools, but make tables, bureaus and desks of excellent workmanship. Those in the shoe-shop acquire a good knowledge of the trade, and become able to earn good wages.

Order is indispensable in such a community as ours. This is secured almost entirely by moral means. The pupils, while out of school are under the care of monitors, who note irregularities of conduct, rudeness, quarrelling or graver offences. These are entered upon a book provided for the purpose, and are reviewed every month by the principal in the chapel. A pupil who has received no mark of discredit for a month, thus showing entire correctness of conduct, has his or her name entered upon the Roll of Honor, where it will remain among the permanent records of the Institution. In addition to this the pupil receives a badge to be worn upon the person, indicating good behavior. By this and other methods a strong influence is brought to bear in the direction of quietness, order and correct deportment, and the results are in the highest degree gratifying. Among one hundred and thirty-five boys, many of whom have grown up without the least restraint or control, ninety-three during one of the winter months, received this honor, while the offences of the others were mostly of a trifling character; and of the ninety-three girls eighty-five received a similar commendation. It is believed that few schools of hearing children, of the same size, would endure such a test with higher credit.

We have been honored during the year by visits from Gov. Chamberlain, accompanied by his Council, from Maine, from Gov. Harriman, of New Hampshire, from the Hon. Secretary and members of the Board of Education, from Massachusetts, and from the Hon. John R. Bartlett, Secretary of State, and Commissioner for Deaf Mutes of Rhode Island. I have also had the pleasure during the year, as Principal of the Institution, of visiting the Legislative Bodies of all the States of New England, accompanied by pupils in different stages of their course, showing the proficiency they attain in the various branches of education and explaining our methods of instruction. The Delegation was everywhere kindly received, and our relations with these Bodies are of the most friendly character.

In the recent discussions respecting the best methods of educating deaf mutes, we hear much of the French and of the German schools. As these schools were the pioneers, and for many years, the only workers in this department of education, and as they differed materially in their fundamental principles, as well as in their practical methods, there was an eminent propriety in the rival systems receiving their designation from the countries where they originated. The work of deaf-mute education, however, has now been prosecuted in this country with enthusiasm and with the highest success, for more than fifty years. In no country in Christendom, are there more able and devoted men engaged in this benevolent work, in none is it more distinctly recognized as the unquestioned duty of the State, no where are the pecuniary means and appliances more liberally and cheerfully provided, and we are free to say, in no country has the education of the deaf mute been carried to a higher point, reached a larger class, or been prosecuted on a broader or more practical basis than in our own. It is quite time, therefore, and for similar reasons, that as we are beginning to have an American Literature, and the phases of a distinct American nationality, we should speak of an American system of deaf-mute education. Though our methods do not differ widely from some followed in other countries, they yet have their peculiar features. Our system is eminently eclectic. Selecting the improvements and best features of other systems, we weave them into one consistent whole, of the highest practical utility. We challenge our brethren engaged in this profession in other countries, to the noble emulation of bringing deaf mutes to a higher plain of culture, of imparting to them a more perfect use of the language of their country, of preparing them more fully for the duties of intelligent citizenship, in fine, of relieving them more completely from the pressure of their misfortune, than is effected in American Institutions, as the result of the American system of instruction.

The Report of the special Joint Committee of the Massachusetts Legislature, (session of 1867) to whom the subject of deaf-mute education was referred, and before whom the rival systems were so fully discussed, came to hand so late, that it could be noticed only in the briefest manner in the last Report presented to your Board. The conclusions reached by this able Committee, after listening to a thorough discussion of the subject, were, for the most part, those which were then advocated, and have ever been maintained by this Institution.

Among the "conclusions" to which they arrive, are the following:

"The sign language and manual alphabet can be taught to all classes of deaf persons and deaf mutes, and are the most effectual means of communicating information to a large majority of such persons.

"Your Committee believe that to the majority of those congenitally deaf, or who lost their hearing in infancy, it (articulation) cannot be successfully taught; but that it can to the majority of semi-mutes and semi-deaf persons." p. 16.

The Committee place a higher value on lip-reading, and upon the ease with which it may be acquired, than our experience will allow us to do. Alluding, however, to the difficulties attending it, they make the following quotation from a letter from a clergyman, who is himself afflicted with deafness.

"In order to read on the lips of an individual, it is necessary that he should speak plainly, deliberately, distinctly, and show an expressive face. Those who wear a full beard, raise their voices to a loud tone, speak with great rapidity, so as to run their words together, are very verbose with long sentences, show little or no movement of their lips, or keep the teeth closed together, are seldom or never understood at all."

They go on to remark:

"That a small number only can be taught lip-reading by one teacher, and that when learned, it can be made available only in a favorable light, and at short distances. Your Committee felt that at the several hearings, the deaf mutes present, if they had been taught lip-reading only, could not have obtained any clear idea of the proceedings, which they were enabled to do by the manual signs of Prof. Bartlett, who acted as interpreter."—p. 17.

The Committee sensibly remark, with regard to the best method of instructing deaf mutes, that "it is a question of proportions." All practical teachers allow, that while all deaf mutes can be taught thoroughly and well, through the medium of signs, a portion can be benefitted by instruction in articulation, and can acquire a certain amount of intelligible speech. The vital point upon which this controversy turns, is, What is this proportion? It is very clear that the line dividing those who can profitably be taught to speak, from those who cannot, does not run between children born deaf, and those who lost their hearing even as late as three or four years of age. The ability to acquire speech, is affected by other important considerations, such as acuteness of mental perception, quickness of observation, flexibility of the vocal organs, and a retentive memory, any of which may be wanting in children who have lost their hearing at a comparatively late period. It not unfrequently happens that when none of these disabilities exist, and the child can distinguish and imitate the position of the vocal organs, the pitch of the voice is so disagreeable as to render the speech acquired intolerable. We are sometimes greatly annoyed by the harsh tones of adult persons, who from a partial loss of hearing, are unable to modulate their voices. When the loss of hearing is total, the attempt at speech is often so discordant that it is seldom made. We hold in the highest esteem the tones of the human voice in all their wonderful and varied play and scope, if they are modulated by a sensitive, delicate ear. But there are few sounds in nature so intolerable, so grating upon every sensibility and nerve, as those of the human voice not thus controlled. There are some sounds in nature that we expect to be harsh and discordant, and therefore, if unavoidable, we can endure them with some degree of patience. But rough screeching tones of the voice are not among these, certainly if there is a more excellent way of communication. When to this unpleasantness, is added an unintelligible utterance which demands frequent repetition, taking into the account also, that to acquire this amount of speech, involves a large expenditure of labor, which brings no other return, it is hardly a question whether the labor of acquisition, is compensated by the benefit received. We hold distinctly, that the natural signs of the deaf mute, for communication on common matters, are not only more agreeable, but more intelligible than a great mass of this imperfect speech, and where persons can resort to writing, such speech, if acquired, should be, in fact actually is set aside. The practical question, therefore, and the one which in spite of all theories, will decide the matter among sensible persons, is not what proportion of deaf mutes can be made, by great labor, to articulate words, which may to a certain degree be understood, but how many have voices that will allow them to use their power of speech obtained at such an expense. Taking into consideration the acknowledged loss of mental development involved in all cases in which articulation is taught, the imperfection of the speech acquired in many cases, and the chance that the tones may be annoying and disagreeable, our experience has led us to the conclusion that very few pupils, except those who are semi-mutes and semi-deaf, can profitably spend much time in this labor. At the same time, we fully concede that there are cases of congenital deafness, where there is on the part of the child, a peculiar flexibility of the vocal organs, and a bright mind, and on the part of the friends, intelligence and abundant leisure, in which instruction in articulation may be properly and successfully given. Even in these cases, it is too tedious and uncertain to be made the medium of instruction. It should be given as a means of communication, and rather as an accomplishment, than as a particularly valuable part of education.

The proposition we are considering, will be materially affected by the language which it is proposed to communicate orally to the deaf mute. German, Italian, or French teachers, may succeed in a much larger number of cases, and to a higher degree, than those who seek to impart the English language. If *half* the number of deaf mutes can be taught to speak intelligibly in these languages, and there is no reliable evidence that nearly this proportion can be so instructed, it by no means follows that a like proportion can acquire the same facility in the English language. Our language confessedly presents peculiar difficulties to the deaf mute; difficulties so formidable that those who have tried it, with scarcely an exception, agree with the views already stated as to the number who can be successfully taught.

Mr. E. M. Gallaudet, President of the National Deaf-Mute College at Washington, and son of the distinguished Founder of this Institution, has recently visited the prominent schools for deaf mutes in Europe, to note carefully their methods, and particularly their success in teaching articulation. It has been vauntingly asserted, and no little pains taken to spread the impression, that in consequence of this examination, Mr. Gallaudet has reached conclusions differing widely from those adopted by his venerated father, and his successors in this school, that he has returned to this country an advocate for material changes in the methods followed here, and finally, that his Report proves that statements we have made respecting methods pursued in other countries, are at variance with facts. To show how groundless are such representations, we have only to allow the able Report of Mr. Gallaudet to speak for itself.

We have maintained that articulation, as a medium of instruction, has, with but one notable exception, been rejected by British instructors and Institutions. What says Mr. G.'s Report on this point?—The following is the testimony of Mr. Charles Baker, the distinguished Principal of the Doncaster Institution:

> "The success hitherto attendant on the efforts to teach articulation to the totally deaf, is by no means flattering, and I do not believe there is one Institution in our country which can produce a dozen pupils whose articulation could be understood by indifferent auditors . . . I must therefore decide against giving up the time now bestowed on the acquisition of language, and useful knowledge, by my pupils, to devote it to the specious acquirement of articulation." pp. 12. 13.

After remarking that at the Institution at Edinburgh, under Mr. Kinniburgh, articulation was the original basis, Mr Baker says:

> "To my certain knowledge, it early gave way to means more universally applicable. Of the older Institutions of these Isles, about twenty, not one has adopted articulation, except in the cases of those pupils who could hear a little, or who had become deaf after they had acquired speech." p. 50.

Mr. Hooper, of the Birmingham Institution, one of the oldest in Great Britain,

> "Is inclined to coincide with Prof. Baker's view, that the results of the labor of teaching the great body of deaf mutes artificial speech, and reading on the lips, are not of sufficient practical benefit to compensate for the necessary outlay of time and labor . . . in the case of the semi-mute and semi-deaf, it is the duty of instructors to see that all possible means are taken to retain and improve what speech is possessed by the pupil. This is done in the Birmingham school, but no more, in the direction of articulation." p. 13.

Mr. Patterson, of the Manchester Institution,

> "Coincides entirely with Prof. Baker and Mr. Hopper. Although he has in several cases taught it successfully to congenital mutes, he thinks it impracticable for any large proportion of the deaf and dumb." p. 121.

Mr. Buxton, of the Liverpool school, who has had several years actual experience in this branch of instruction in the London Institution, says:

> "Articulation was formerly taught in the Liverpool school to a greater extent than at present. Now, only the semi-mute and semi-deaf are instructed in artificial speech and lip-reading."

Mr. Buxton mentioned that "many cases in his experience had arisen, where parents of his pupils particularly requested that their children should not be taught articulation. The reason for this, is found in the fact that the artificially acquired utterances of the deaf, are generally monotonous, and oftentimes disagreeable: so unpleasant evidently, in certain cases, as to lead the parents of uneducated mutes to express the desire above referred to." p. 16.

The venerable Duncan Anderson, of the Glascow Institution, who in former years had given much attention to this subject, and had prepared a valuable manual for use in this branch of deaf-mute instruction, says:

> "The experience of nearly half a century of personal deaf-mute instruction had led him to abandon all efforts at articulation, save with the semi-deaf and semi-mute." p. 16.

Again he says:

> "On looking back upon an experience of forty-one years as a teacher of the deaf and dumb, I am free to confess that the few successful instances of articulation by deaf mutes which I have witnessed in this and other countries, were very inadequate to the time and pains bestowed upon them." ibid.

The Rev. John Kinghan, of the Institution of Belfast, Ireland,

> "Is as decided in his testimony against articulation as any instructor in the United Kingdom. He deems it, to use his own words, 'worse than useless in a vast majority of cases;' including the semi-deaf and semi-mute." p. 17.

The views of the Principals of the other schools in the British Isles visited by Mr. Gallaudet, agree entirely with those above presented, and similar opinions are entertained by the Masters of several schools on the continent. The gentlemen whose testimony is here quoted, are among the oldest and ablest teachers of deaf mutes in the world. Their lives have been devoted to this work, and their writings and their labors have placed them in the highest rank among the benefactors of this class of persons. Mr. Gallaudet sensibly remarks:

> "The testimony of such experienced instructors as those now conducting the eight schools declaring against articulation, coupled with the consideration that in the majority of them, it has been successfully taught, is entitled to great weight, while the fact that it is where the English language is spoken that such strong ground is taken, should not be lost sight of by Americans."

It will be noticed that views of British teachers as above expressed, correspond with our own, that few, except the semi-mute and semi-deaf, can profitably be taught to speak.

Although German teachers make this proportion larger than this, it does not, in their view, embrace the whole number, or a majority. Canon de Haerne, of the Institution of Brussels, Belgium, while believing "that a decided majority of so-called deaf-mutes are unable to acquire any valuable facility in artificial speech, holds that in addition to the semi-deaf and semi-mute, about ten per-cent. of congenital mutes, may acquire fluency in this method of communication.

Signor Tarra, of the Milan Institution, estimates the number of deaf mutes who may succeed in articulation, at thirty per-cent., including the semi-mutes and semi-deaf, and also many who could not talk readily with strangers.

Mr. Hill, of Weissenfels, who stands at the head of deaf-mute instruction in Germany, says that out of one hundred, eleven can converse readily with strangers on ordinary topics. Prof. Vaisse of the Paris Institution, gives the same proportion. "Out of ten, the number who can converse with strangers on all subjects, and with ease, will not extend to more than two, and often to no more than one." Of the more than one hundred teachers consulted by Mr. Gallaudet, only *one* claimed that success in articulation was the *rule* among deaf mutes.

These, it will be noticed, are the opinions of gentlemen who are advocates of the articulating system. The usual average is thirty per-cent., one placing it at fifty per-cent, and only one placing it higher than this. Is it not highly probable, without casting the least reflection on these worthy and able gentlemen, that the unbiassed judgment of a candid and competent observer, would make the proportion of clearly successful cases considerably smaller than this?

Mr. Gallaudet states it as his own judgment, that from ten to twenty per-cent. of the deaf and dumb can profitably be taught articulation. As the semi-mute and semi-deaf constitute about half this number, he would thus judge that ten per-cent. of congenital mutes are worthy of such instruction. This we believe to be a larger number than any experiment yet made in the English language will warrant, nor do we think it desirable for the sake of a possible benefit conferred upon this proportion, to subject the whole number to the tedious and exhausting processes of artificial speech, during the first year of their instruction. Mr. G. gives his final conclusions on this point, in the following decided language:

> "It is plainly evident from what is seen in the articulating schools of Europe, and from the candid opinions of the best instructors, that oral language, cannot in the fullest sense of the term, be mastered by a majority of deaf mutes. . . . It should be regarded as an accomplishment attainable by a minority only. . . . The number of those born deaf who can acquire oral language is small, and their success may justly be attributed to the possession of peculiar talents or gifts, involving almost preternatural quickness of the eye in detecting the slight variations in positions of the vocal organs in action, and a most unusual control over the muscles of the mouth and throat." p. 53.

It is indeed evident from Mr. Gallaudet's observations, that if there has been any change in the views of teachers on the Continent within the last ten years, it has been quite as distinctly a movement towards the use of signs as towards articulation. While in some schools in which the latter method was formerly disused, a portion of the pupils are now taught to speak, in others in which articulation was the sole method, signs are freely used and highly valued. In place of the theory once quite general among the disciples of Heinicke, that all deaf mutes of sound mental development could be taught to speak, and that inability to acquire speech, indicated a want of ordinary capacity, it is now generally admitted, on the one hand, that a large class can only be successfully instructed by signs, and on the other, that they are an important adjunct in teaching articulating pupils.

With regard to the value of signs in the instruction of all classes of deaf mutes, the opinion of prominent German teachers is emphatic and decided. Mr. Hill states his views in the strongest terms. Speaking of proscribing every species of pantomimic language, he says:

> "This pretence is contrary to nature, and repugnant to the rules of sound educational science. If this system were put into execution, the moral life, the intellectual development of the deaf and dumb, would be inhumanly hampered. It would be acting contrary to nature to forbid the deaf mute a means of expression employed even by hearing and speaking persons. . . . To banish the language of natural signs from the school-room and limit ourselves to articulation, is like employing a golden key which does not fit the lock of the door we would open, and refusing to use the iron one made for it. . . . Where is the teacher, who can conscientiously declare that he has discharged his duty, in prosponing moral and religious education until he can impart it by means of articulation?"—p. 29.

Mr. Hill acknowledges in the language of natural signs, among a number of other particulars which he mentions, the following excellencies:

> —"One of the two universally intelligible innate forms of expression granted by God to mankind—a form which is in reality more or less employed by every human being.
>
> —The element in which the mental life of the deaf mute begins to germinate and grow; the only means whereby he, on his admission to the school, may express his thoughts, feelings and wishes.
>
> —An instrument of mental development and substantial instruction, made use of in the intercourse of the pupils with each other; for example, the well known beneficial influences which result from the association of the new pupils with the more advanced.

—A most efficacious means of assisting even pupils in the higher degrees of school training, giving light, warmth, animation to spoken language, which for sometime after its introduction, continues dull and insipid."—p. 30.

Of its aid in religious instruction Mr. Hill remarks:

"It is particularly in the teaching of religion, that the language of pantomime plays an important part, especially when it is not only necessary to instruct, but to operate on sentiment and will; either because here this language is indispensable to express the moral state of man, his thoughts and his actions, or that the word alone *makes too little impression on the eye of the mute* to produce without the aid of pantomime, the desired effect in a manner sure and sufficient." p. 30, 31.

We have no where met with a more appreciative exposition of the real significance and value of natural signs in the education of the deaf and dumb, than these forcible paragraphs of Mr. Hill.

We will close our quotations with the decided and emphatic testimony of Mr. Gallaudet in favor of the American system of deaf-mute education.

"It is hardly needful for me to say, after what has been said in this Report, that nothing in my foreign investigations has led me to question the character of the foundation on which the system of instruction pursued in our American Institutions is based. The edifice is built on the rock of sound philosophy; its corner stone is universal applicability; its materials are cemented by consistency and success, while for its crowning beauty it has a dome of high educational attainment, loftier and more grand than can be seen in the nations of the Old World." p. 53.

We have made these copious extracts from this able and interesting Report, partly from the relation of its author to the founder of our own school, and partly because the Report itself, has been confidently quoted as a distinct condemnation of the methods and principles which have been advocated here, from the beginning to the present time.

We entered into this discussion at the outset, and have continued it, with no partisan spirit. The principles upon which our Institution was founded, and has since been conducted, were sharply assailed. Our sole object has been to show that we are not beating the air, but are working intelligently and successfully to secure grand and important ends: that the methods we adopt for this purpose, are sanctioned by sound philosophy, as well as by the experience of the most able men who have turned their attention to this subject. We regard no Institution or school as in any sense a rival in this good work, but hail with satisfaction every honest effort to help on the education, and consequent elevation of the unfortunate mute. Wedded mechanically to no system for its own sake, or for any prestige of antiquity or association, we strive to give our pupils the best education which science, skill and faithful instruction, under the best methods, can impart.

The semi-mute and semi-deaf children who are sent to us, have always received special attention. While by instruction, through the medium of signs, their minds have been sedulously cultivated, we have been careful to retain and improve all their power of speech. This has sometimes been done by assigning to this class a special teacher, and at other times by placing them under speaking instructors, and holding with them constant oral communication. We propose still to give these children every desirable advantage, assigning to them a special instructor, if the numbers will warrant it; if not, taking care, by other methods, that the facility of speech which some of them possess, shall not be lost. We deem this discussion as in all respects fortunate and timely, as it has served to bring not only the real calamity of the deaf mute, but also the best means of relieving it, more distinctly to public attention. We have no apprehension respecting the verdict of sensible persons who will review the whole subject.

The newspapers* sent our pupils, for the most part weekly issues from the vicinity of their own homes, contribute so manifestly not only to their enjoyment, but also to their intellectual progress, that they are worthy of distinct mention. Before his education commences, the deaf mute is shut out to a great degree from a knowledge of the events occurring in the world around him. A happy change comes over him when, on entering the Institution, he is brought within the electric circle of intelligence, and becomes informed, even through others, of what is daily transpiring in the busy world. When his education is so far advanced that he can read for himself from the columns of a paper the record of passing events, his interest is unbounded. It is often surprising to notice the extent to which even those whose ability to use language, from the short time they have been at school, is quite limited, yet are able to spell out the meaning of a paragraph containing some item of news from familiar localities, while the large class of more advanced pupils read the papers with intelligent facility, and with far more enjoyment than is usual with hearing persons. The papers are regularly distributed, care being taken to supply the children with issues from their own neighborhood. They are perused with eagerness, and there are few communities more thoroughly posted in the current news of the day than our own.

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* Appendix, No. IV.

The walls of the Institution have received some graceful and most acceptable decorations during the year. An excellent set of the Cartoons of Raphael, presented by the Rev. J. D. Hull, of New York, have been handsomely framed and placed in the girls' sitting room, where they are a constant joy to many observing and admiring eyes. Mr. R. S. DeLamater, and Messrs. Webster & Popkins, have each presented us with a highly finished photograph of the venerable Laurent Clerc, while Messrs. Prescott & White, have furnished fine copies of the old and well engraved portraits of those magnates of deaf-mute education, the Abbe De l' Epee, and the Abbe Sicard. These pictures are finished in the highest style of art, and as long as the Institution shall stand, they will remain on its walls, speaking representatives of these benefactors of the Deaf and Dumb, and of the skill of the generous artists who have so faithfully perpetuated their memory.

A citizen of Hartford, who is in the habit of such kind deeds, but whose modesty prefers that his name shall be withheld, has gained for himself a warm place in the hearts of our pupils by the gift of two barrels of luscious oranges, to aid them in celebrating the holidays.—Our acknowledgements are due to Messrs. J. G. Batterson and J. W. Stancliff for the high gratification enjoyed by our pupils of repeatedly visiting the collection of beautiful paintings on exhibition at the Wadsworth Atheneum during the month of March.—Miss Dix, whose generous sympathy for the suffering and unfortunate, has gained for her so noble a reputation, has sent our pupils ten dollars, as an indication of her interest in their welfare, desiring the sum to be spent in some way which shall contribute to their gratification.—Mr. J. R. Burnet, of Newark, N. J., has sent us some carefully drawn views of places in the Holy Land.—We are indebted to the American Tract Society, of Boston, for the acceptable grant of one hundred and fifty copies of the "Child'sPaper," and for twenty-five copies of the "Christian Banner."—Hon. A. D. Hager, of Proctorsville, Vt., has presented to the Library of the Institution two valuable volumes on the geology of Vermont.—We are also indebted to the Hon. L. S. Foster for valuable Public Documents.

With devout gratitude to God for His watchful care over every department of the Institution during the year that is past, we invoke upon its future course His continued guidance and blessing.

COLLINS STONE,
Principal.

American Asylum,
May 16, 1868.

REPORT OF THE PHYSICIAN.

The year just closed, adds another to the catalogue of those during which the general health of this large household has been usually very good.

There have been but two periods, and these of brief duration, during which the pupils have suffered from diseases of consequence, or which affected any considerable number. One of these occurred soon after my last Report was presented to your Board, when measles made its appearance, and included in the course of the outbreak about eighty cases. Several of them were quite severe, and one died of congestive pneumonia, which suddenly supervened upon the ordinary pulmonary symptoms.

The duration of this malady did not much, if at all, exceed three weeks, ceasing, doubtless, for want of subjects.

Soon after the commencement of the fall term, an affection of the eyes appeared in the form of acute ophthalmia, varying in severity, but generally easily controlled, and soon terminating favorably in most cases. It was confined principally to the boys, very few girls comparatively, suffering from it.

The cause, though probably local, eluded the most careful search, and still occasionally manifests its presence in a sporadic case.

A case of malignant pustule occurred in February last, in the person of one of the larger boys, terminating fatally in about thirty-six hours from the time it was first seen professionally.

A single case of fracture of the fore-arm, occurring in a little boy, concludes, it may be said with almost exact truth, the list of ailments which have come under my observation during the year, the usual acute pulmonary and other diseases so common during Spring and Autumn, not having appeared, being supplanted perhaps, by those before named.

The Hygiene of the Institution, to which the utmost importance is justly attached, continues to be strictly observed in each and all of those particulars to which reference has been had in my former Reports, and which are so intimately connected both with the health and the effective working capacity of the pupils.

E. K. HUNT, M. D.

Hartford, May 6th, 1868.

APPENDIX.

I.

ABSTRACT OF THE TREASURER'S ACCOUNT.

Dr. American Asylum in account with Roland Mather, Treasurer. Cr

Date	Dr.	Amount
1868. April 1.	To Cash Paid Orders of Directing Committee, in favor of Henry Kennedy, Steward, the year past,	$28,500.00
	" " for Salaries,	20,036.42
	" " " Annuity to Laurent Clerc,	700.00
	" " " Insurance,	363.00
	" " " Library,	100.00
	" " " Sundry Expenses,	1,189.37
	" " " Reinvestments, "Fund Account,"	53,000.00
	" " " Balance to Cr. of New Account,	678.00
		$104,566.86

Date	Cr.	Amount
1867. April 1.	By balance on hand,	$80.27
1868. April 1.	" Income from the fund the year past,	17,742.17
	" Rent of Dwellings,	475.00
	" Paying Pupils,	3,236.84
	" Receipts from the six N. E. States for support of Beneficiaries,	36,187.50
	" Receipts from Fund Account,	46,500.00
	" Advanced to A. Blodget Estate, repaid,	345.08
		$104,566.86

ROLAND MATHER, Treasurer.

Hartford, April 1, 1868.

Examined and found correct. We have also this day examined the vouchers for the securities owned by the American Asylum, as per Inventory of the Treasurer, and find them to agree with the same.

ERASTUS COLLINS, } *Auditors.*
JONA. B. BUNCE, }

Hartford, May 16, 1868.

II. STATEMENT

OF THE FUND OF AMERICAN ASYLUM.

Invested in Bank Stocks in Connecticut, - -	$94,100.00
" on Bond and Mortgage of Real Estate,	88,500.00
" in Railroad Bonds, - - - -	23,900.00
" in United States Bonds, - - - -	7,000.00
Real Estate in Hartford, - - - -	82,522.88
Furniture in the Institution, - - - -	5,390.00
Cash on hand, - - - . - - -	678.07
	$302,090.95

HARTFORD, May 16, 1868.

III. ABSTRACT OF

Dr. *American Asylum in account with Henry*

To Flour,	$3,724.70
" Meal,	9.00
" Cakes and Crackers,	39.41
" Rice and Corn Starch,	81.11
" Yeast,	119.00
" Hay and Straw,	265.51
" Provender and Oats,	620.14
" Live Stock,	455.00
" Tools, Blacksmithing, &c.,	466.76
" Butter,	3,125.33
" Charcoal,	445.65
" Hard Coal,	2,354.78
" Wood,	38.25
" Furniture,	1,113.84
" Groceries,	2,265.32
" Light and Gas Bills,	802.10
" Meat, Fish and Fowl,	4,169.48
" Medicine,	267.92
" Miscellaneous,	548.98
" Pupils,	1,011.54
" Repairs and Improvements,	1,862.34
" Schools and Postage,	476.23
" Cabinet Shop,	1,497.78
" Shoe "	2,045.83
" Tailor "	549.80
" Vegetables and Fruits,	859.44
" Wages,	3,086.26
" Washing and Soap,	649.98
" Water Works,	128.40
	$33,079.88
Balance to new account,	187.83
	$33,267.71

CURRENT EXPENSES.

Kennedy, Steward, for the year ending April 1, 1868. Cr.

By Cash from Treasurer,	$28,500.00
“ “ “ State of Massachusetts,	768.75
“ “ “ “ Rhode Island,	34.17
“ “ “ “ Vermont,	107.78
“ “ “ “ Connecticut,	162.73
“ “ “ “ Maine,	487.50
“ “ “ “ New Jersey,	37.52
“ “ “ “ Pupils,	1,153.23
“ “ “ “ Individuals,	1,521.60
“ “ “ “ Cabinet Shop,	67.30
“ “ “ “ Shoe “	210.89
“ “ “ “ Tailor “	35.81
“ “ “ “ Miscellaneous,	3.84
“ Balance from old account,	176.59
	$33,267.71

American Asylum, Hartford, April 1st, 1868.

IV. PAPERS, PERIODICALS, &c.

THE FOLLOWING PAPERS HAVE BEEN SENT TO THE PUPILS GRATUITOUSLY DURING THE PAST YEAR.

Name.		Editors and Publishers.	Where Published.
Ægis and Gazette,	Weekly,	S. B. Bartholomew & Co.,	Worcester, Mass.
American Traveler,	"	Worthington, Flanders & Co.,	Boston, "
Anamosa Eureka,	"	Edmund Booth & Son,	Anamosa, Iowa.
Argus and Patriot,	"	Hiram Atkins,	Montpelier, Vt.
Boston Advertiser,	Daily,	Dunbar, Waters & Co.,	Boston, Mass.
Boston Courier,	Weekly,	George Lunt & Co.,	" "
Boston Journal,	"	Charles O. Rodgers,	" "
Boston Transcript,	"	Henry W. Dutton & Son,	" "
Burlington Free Press,	"	G. G. & B. L. Benedict,	Burlington, Vt.
Burlington Times,	"	George H. Bigelow,	" "
Christian Mirror,	"	Charles A. Lord,	Portland, Me.
Christian Secretary,	"	E. Cushman,	Hartford, Conn.
Churchman,	"		" "
Columbian Register,	"	Osborn & Baldwin,	New Haven, "
Congregationalist,	"	W. L. Greene & Co.,	Boston, Mass.
Connecticut Courant,	"	Hawley, Goodrich & Co.,	Hartford, Conn.
Connecticut Herald and Journal,	"	Carrington, Hotchkiss & Co.,	New Haven, Ct.
Deaf Mute Casket,	Monthly,	W. J. Palmer,	Raleigh, N. C.
Eastern Argus,	Weekly,	John M. Adams & Co.,	Portland, Me.
Fitchburg Sentinel,	"	Garfield & Stratton,	Fitchburgh, Mass.
Hartford Courant,	Daily,	Hawley, Goodrich & Co.,	Hartford, Conn.
Hartford Post,	"	Sperry, Hall & Co.,	" "
Hartford Times,	"	Burr Brothers,	" "
Independent Democrat,	Weekly,	Independent Press Association,	Concord, N.H.
Kenebec Journal,	"	Stevens & Sayward,	Augusta, Me.
Maine Farmer,	"	True & Boardman,	" "
Maine State Press,	"	N. A. Foster & Co.,	Portland, "
Massachusetts Spy,	"	J. D. Baldwin & Co.,	Worcester, Mass.
Mirror and Farmer,	"	John B. Clarke,	Manchester, N. H.
Natick Times,	"	Washington Clapp,	Natick, Mass.
New Hampshire Patriot and Gazette	"	William Butterfield,	Concord, N. H.
" " Statesman,	"	McFarland & Jencks,	" "
" " Telegraph,	"	Dearborn & Berry,	Nashua, N. H.
" London Democrat,	"	D. S. Ruddock,	New London, Conn.
" York Evangelist,	"	Field & Craighead,	New York City.
" " Spectator,	"		" "
" " State Radii,	"	Levi S. Backus,	Canajoharie, N. Y.
Northampton Free Press,	Semi-Weekly,	Albert R. Parsons,	Northampton, Mass.
Norwich Courier,	Weekly,	Bulletin Association,	Norwich, Conn.
Portland Advertiser,	"	Smith & Wiltham,	Portland, Me.
Portland Transcript,	"	Elwell, Pickard & Co.,	" "
Providence Journal,	"	Knowles, Anthony & Danielson,	Prov., R. I.
Religious Herald,	"	D. B. Mosely,	Hartford, Conn.
Republican Standard,	"	John D. Candee,	Bridgeport, Conn.
Rhode Island Free Press,	"	Providence Press Co.,	Providence, R. I.
Rutland Herald,	"		Rutland, Vt.
Union Democrat,	"	Campbell & Hanscom,	Manchester, N. H.
Vermont Christian Messenger,	"	C. W. Willard,	Montpelier, Vt.
Vermont Watchman and State Journal,	"	E. P. Walton,	" "
Vineyard Gazette,	"	Charles M. Vincent,	Edgartown, Mass.
Waterbury American,	"	E. B. Cook & Co.,	Waterbury, Conn.
Willimantic Journal,	"	Curtis & Jackson,	Willimantic, Conn.
Worcester Palladium,	"	J. S. C. Knowlton,	Worcester, Mass.
Zion's Herald,	"	Haven & Rand,	Boston, Mass.

The Presidents and Superintendents of the following Railroads will please accept our thanks for special favors shown to the pupils of the Institution during the year.

Boston & Albany.
Boston & Maine.
Boston & Providence.
Concord, Manchester & Lawrence.
Connecticut & Passumpsic.
Connecticut River.
Hartford, New Haven & Springfield.
Hartford, Providence & Fishkill.
Portland & Kennebec.
Rutland & Burlington.
Vermont Central.
Worcester & Nashua.

COLLINS STONE, *Principal.*

HARTFORD, May 16, 1868.

V.

LIST OF PUPILS,

IN THE SCHOOL WITHIN THE YEAR ENDING ON THE 16TH OF MAY, 1868.

MALES.

Name.	Residence.	Admission.
Abbott, W. John	Sidney, Me.,	Sept., 1865
Abbott, William W	Northumberland, N. H.,	Sept., 1861
Acheson, Charles	West Randolph, Mass.,	Sept., 1864
Acheson, George W	West Randolph, Mass.,	Sept., 1864
Aldrich, Erwin E	Smithfield, R. I.,	Sept., 1864
Anderson, Wallace E	South Framingham, Mass.,	Sept., 1867
Bailey, Arthur E	Poland, Me.,	Sept., 1866
Baker, Jesse H	Manchester, N. H.,	Sept., 1867
Baldwin, Charles F	Litchfield, Conn.,	Sept., 1864
Barrett, William S	Plymouth, Mass.,	Sept., 1865
Bastinella, Oliver	Pittsfield, Mass.,	Sept., 1865
Blodget, Frank P	Nashua, N. H.,	Sept., 1867
Bond, Thomas S	Hartford, Conn.,	Sept., 1860
Bowler, Albert O	Rockland, Me.,	Sept., 1867
Boyington, George W	Prentiss, Me.,	Nov., 1860
Branch, Degrand, D. L	Hartford, Conn.,	Sept., 1866
Brown, Alpheus E	North Dunbarton, N. H.,	Sept., 1867
Butler, John	East Boston, Mass.,	Sept., 1863
Cain, Cornelius	Lewiston, Me.,	Sept., 1867
Campbell, John,	Danbury, Conn.,	Nov., 1867
Carter, William T	Boston, Mass.,	Oct., 1866
Cary, Daniel W	Gardiner, Me.,	Sept., 1860
Chapman, Albert W	Cambridgeport, Mass.,	Sept., 1865
Clark, Frank H	East Hampton, Mass.,	Sept., 1867
Clark, John	Monson, Mass.,	Sept., 1865
Conley, James	Newport, R. I.,	Oct., 1861
Conners, John J	Mansfield, Mass.,	Sept., 1865
Cook, Thomas	Portland, Me.,	Sept., 1865
Coughlin, William	Fitchburgh, Mass.,	Sept., 1862
Crandall, William F	Newport, R. I.,	Sept., 1860
Crane, John E	Whiting, Me.,	Feb., 1868
Cronan, Stephen	Fitchburgh, Mass.,	Sept., 1862

Name.	Residence.	Admission.
Cross, Samuel S	Beverly, Mass.,	Sept., 1864
Culver, Samuel L	Waterville, Conn.,	Sept., 1866
Cummings, Daniel	Greeneville, Conn	Sept., 1864
Cutter, George F	Irasburgh, Vt.,	Sept., 1865
Damon, Frank C	Amherst, N. H.	Sept., 1861
Daniels, Orson	North Adams, Mass.,	Sept., 1867
Davis, Edwin A	Auburn, Me.,	Sept., 1867
Day, Myron W	South Royalston, Mass.,	Sept., 1864
Derby, Ira H	South Weymouth, Mass.,	Sept., 1861
Dougherty, Charles	Hartford, Conn.,	Sept., 1863
Drew, Frank H	Boston, Mass.,	Sept., 1865
Drown, Carlos	Brownington, Vt.,	Sept., 1861
Duran, Edward	South Boston, Mass.,	Sept., 1865
Duran, Thomas	South Boston, Mass.,	Sept., 1865
Ellis, Manford	Belgrade, Me.,	Sept., 1864
Erbe, Hermann	Southington, Conn.,	Sept., 1865
Evans, Oscar H	South Royalston, Mass.,	Sept., 1861
Fahy, Thomas	Pittsfield, Mass.,	Sept., 1862
Ferris, John	Waitsfield, Vt.,	Dec., 1862
Fifield, Oscar W	Deer Isle, Me.,	Nov., 1862
Fish, Charles	Danby, Vt.,	Sept., 1865
Fitch, Henry H	Preston, Conn.,	Sept., 1860
Freallick, James F	Provincetown, Mass.,	Sept., 1865
Frisbee, Edward W	Charlestown, Mass.,	Sept., 1866
Frost, Edwin F	Boston, Mass.,	Sept., 1861
Gale, Arthur F	Charlton, Mass.,	Sept., 1863
Gambol, John	South Boston, Mass.,	Oct., 1864
Gardner, William M.	Hardwick, Mass.,	Sept., 1864
Graham, Samuel	Newark, N. J.,	Sept., 1866
Halsey, Waldron H	Newark, N. J.,	Nov., 1863
Hargrave, Albert C.	East Boston, Mass.,	Sept., 1867
Harris, Alvah H	Neponset, Mass.,	Oct., 1863
Hawley, Levi R	North Amherst, Mass.,	Sept., 1865
Hawley, Lewis N	North Amherst, Mass.,	Sept., 1865
Hayden, Othello D	Stoughton, Mass.,	Sept., 1863
Helfpenny, Martin	Waterbury, Conn.,	Sept., 1864
Hill, Willie L	Athol Depot, Mass.,	Sept., 1864
Jellison, Simon	Monroe, Me.,	Sept., 1865

Name.	Residence.	Admission.
Johnson, George D	Erving, Mass.,	Sept., 1862
Josselyn, Andrew P	East Foxboro, Mass.,	Sept., 1863
Kendall, Phillip	Whitefield, Me.,	Sept., 1865
King, James H	Middletown Point, N. J.,	Sept., 1865
Ladd, Amos A	East Haddam, Conn.,	Sept., 1866
Ladue, Edward	St. Albans, Vt.,	Sept., 1864
Lally, John	South Boston, Mass.,	Sept., 1866
Laplant, Peter	West Milton, Vt.,	Nov., 1866
Leary, Matthew	Boston, Mass.,	Sept., 1863
Lewis, Willie H	Providence, R. I.,	Sept., 1867
Mackintosh, George	Canton, Mass.,	Sept., 1864
Marr, Ira R	North Washington, Me.,	Sept., 1867
Marston, Westley N	Greenland, N. H.,	Sept., 1864
Martin, Charles H	Salem, Mass.,	Sept., 1863
Mayhew, Jared	Chilmark, Mass.,	Sept., 1864
Mayo, Hawes	Monroe, Me.,	Sept., 1865
McCarty, John	Andover, Mass.,	Sept., 1865
McDonnell, John	West Stockbridge, Mass.,	Sept., 1865
McGirr, Francis	East Cambridge, Mass.,	Sept., 1863
McKinney, Wm. J	Alleghany City, Penn.,	Sept., 1865
McMaster, Hugh H. B	Pittsburgh, Penn.,	Sept., 1864
McMechen, James H	Wheeling, West Virginia,	Aug., 1865
Meagher, Michael	Waterbury, Conn.,	Sept., 1865
Miller, George	Providence, R. I.,	Sept., 1861
Mitchell, Isaac	Brookville, Vt.,	Sept., 1867
Morrell, Leland	Cornish, Me.,	Sept., 1865
Moseley, Joseph A	Pomfret, Conn.,	Sept., 1862
Moulton, Thomas	Buxton Centre, Me.,	Sept., 1864
Muth, John	Hartford, Conn.,	Sept., 1865
Negus, Edward R	Salisbury, Conn.,	Sept., 1866
Nelson, James	Tewksbury, Mass.,	Sept., 1864
O'Harra, John	Milford, Mass.,	Sept., 1860
O'Neil, John	Thorndike, Mass.,	Sept., 1867
O'Neil, Michael	Charlestown, Mass.,	Sept., 1866
Ould, Edward C	Derby, Conn.,	Sept., 1861
Page, Roscoe G	Augusta, Me.,	Sept., 1860
Pattee, Wilbur D	Alexandria, N. H.,	Sept., 1867
Patterson, Charles	Saco, Me.,	Sept., 1864
Paul, John E	Cambridgeport, Mass.,	Sept., 1867

Name.	Residence.	Admission.
Peterson, Willie S. H.	South Plymouth, Mass.,	Sept., 1862
Philbrook, Henry O.	Charlestown, Mass.,	Sept., 1864
Pick, William C.	Providence, R. I.,	April, 1863
Pond, Nathan L.	Milford, Mass.,	Sept., 1862
Porter, Wendell P.	Somerville, Mass.,	Nov., 1858
Powers, James	Boston, Mass.,	Sept., 1865
Powers, James A.	Salem, Mass.,	Mar., 1862
Pratt, John W	Middletown, Conn.,	Sept., 1861
Quincy, Josiah	Munson, Mass.,	Sept., 1865
Richmond, Ephraim H.	Voluntown, Conn.,	Sept., 1865
Rideout, Charles H	Houlton, Maine,	Sept., 1863
Roberts, Frank B.	Boston, Mass.,	Sept., 1866
Rudolph, William	Boston, Mass.,	Sept., 1866
Ryan, John	Rutland, Vt.,	Sept., 1865
Sachse, Charles F.	Waterbury, Conn.,	Sept., 1861
Sackett, Charles E	South Glastenbury, Conn.,	Sept., 1865
Saul, Willie H	Salem, Mass.,	Sept., 1866
Scoles, William M	Augusta, Me.,	Sept., 1863
Seamen, Mortimer W	Rockville, Conn.,	Sept., 1866
Sharts, Herman H	Hudson, N. Y.,	Sept., 1865
Skelly, Edwin J	Rochester, N. H.,	Sept., 1867
Slattery, Patrick	Boston, Mass.,	Sept., 1862
Small, Albert A.	Auburn, Me.,	Sept., 1863
Small, George B	Hartland, Vt.,	Sept., 1865
Small, Walter R.	Hartland, Vt.,	Oct., 1862
Smith, Freeman N.	Chilmark, Mass.,	Sept., 1861
Smith, George	Springfield, Mass.,	Sept., 1864
Smith, Orlando A	Roxbury, Mass.,	Sept., 1863
Soper Isaac N	Lowell, Mass.,	Sept., 1861
Sparrow, Wilber N	Eastham, Mass.,	Sept., 1864
Stevens, William	Stonington, Conn.,	Sept., 1867
Sullivan, Patrick J.	Boston, Mass.,	Sept., 1860
Tufts, Samuel A.	Malden, Mass.,	Sept., 1865
Walker, Freddie	Norwich, Conn.,	Sept., 1864
Wardman, Samuel	Ballardvale, Mass.,	Sept., 1866
Waters, Warren L	Hartford, Conn.,	Sept., 1865
Watts, Francis A.	Rockville, Conn.,	Sept., 1860
Weaver, Jonathan	South Woodstock, Conn.,	Sept., 1866
Webb, Clarence A.	Canterbury, Conn.,	Sept., 1864

Name.	Residence.	Admission.
Wellington, Elbridge A	Wayland, Mass.,	Sept., 1863
Wentworth, Sylvester W.	Ipswich, Mass.,	Sept., 1864
Wheeler Staunton F	Plymouth, Vt.,	Sept., 1863
White, Henry,	Roxbury, Mass.,	Sept., 1866
Wilkinson, John.	West Lubec, Me.,	Sept., 1861
Winslow, John N	Putnam, Conn.,	Sept., 1867
Wood, Eugene W	Webster, Mass.,	Sept., 1861

FEMALES.

Adams, Alda M	Charlestown, Mass.,	Sept., 1866
Annan, Josephine A	Manchester, N. H.,	Sept., 1864
Atkins, Sylvia B	Chatham, Mass.,	Sept., 1862
Axt, Matilda	New Haven, Conn.,	Sept., 1866
Ayshers, Mary	Hartford, Conn.,	Feb., 1867
Barnard, Ada J	Lowell, Mass.,	Sept., 1865
Barry, Anna B	Baltimore, Md.,	Sept., 1867
Bishop, Stella M	East Avon, Conn.,	Sept., 1866
Bond, Julia P	Hartford, Conn.,	June, 1865
Brown, Emily C	North Stonington, Conn.,	Sept., 1864
Brown, Susan F	North Dunbarton, N. H.,	Nov., 1865
Carey, Mary	Boston, Mass.,	Sept., 1863
Carroll, Mary E	South Boston, Mass.,	Sept., 1867
Case, Lillie A	East Avon, Conn.,	Oct., 1867
Chaffin, Abbie L	Worcester, Mass.,	Sept., 1865
Champion, Ellen J	Westmore, Vt.,	Sept., 1863
Clapp, Elmina D	Newburgh, N. Y.,	Sept., 1860
Clark, Millie H	Biddeford, Me.,	Sept., 1867
Cole, Lizzie M	Concord, N. H.,	Sept., 1867
Colley, Mary E	Falmouth, Me.,	Oct., 1862
Corcoran, Ellen	East Boston, Mass.,	Nov., 1865
Daley, Nancy J	Chester, Conn.,	Sept., 1865
Darghan, Joanna	New Haven, Conn.,	Sept., 1867
Dewsnap, Clara	Lakeville, Conn.,	Jan., 1863
Driscoll, Julia A	East Boston, Mass.,	Nov., 1865

Name.	Residence.	Admission.
Dubè, Adeline	Orono, Me.,	Sept., 1866
Duffy, Ellen	Boston, Mass.,	Sept., 1867
Dummer, Caroline L.	Weld, Me.,	Sept., 1866
Dunnell, Marilla	Buxton Center, Me.,	Sept., 1866
Durbrow, Carrie B.	New York City,	Oct., 1863
Eaton, Mary E.	East Salisbury, Mass.,	Sept., 1863
Emerson, Gertrude A.	Danby, Vt.,	May, 1864
Fahy, Bridget	Pittsfield, Mass.,	Sept., 1864
Flagg, Clarinda J.	Natick, Mass.,	Sept., 1862
Foley, Bridget	Bristol, Conn.,	Sept., 1863
Foley, Mary A.	Bristol, Conn.,	Sept., 1863
Frost, Harriet E.	Bucksport, Me.,	Sept., 1865
Gardner, Rosa	Greeneville, Conn.,	Sept., 1859
Gray, Leonora C.	New Haven, Conn.,	Sept., 1864
Hall, Elizabeth	Portland, Me.,	Sept., 1863
Harper, Sarah L.	New London, Conn.,	Sept., 1867
Hartshorn, Anna S.	Boston, Mass.,	Sept., 1865
Hichens, Mary W.	Wellfleet, Mass.,	Sept., 1861
Howe, Eldora M.	Marlboro, Mass.,	Sept., 1861
Hull, Ida A.	Plainville, Conn.,	Sept., 1864
Hull, Josephine D.	Farmington, Conn.,	Sept., 1867
Knapp, Sophia A.	Winchester, N. H.,	Sept., 1861
Lee, Mary J.	East Longmeadow, Mass.,	Sept., 1864
Linnehan, Mary A.	Boston, Mass.,	Sept., 1866
Lovejoy, Lydia A.	Augusta, Me.,	Sept., 1867
Lummis, Delia A.	Pomfret, Conn.,	Sept., 1866
Lyons, Ellen	Ludlow, Mass.,	Sept., 1864
Marks, Sarah C.	Providence, R. I.,	Nov., 1863
Marr, Anna M.	North Washington, Me.,	Sept., 1867
Martes, Elizabeth	Charlestown, Mass.,	Sept., 1867
Mason, Flora S.	Bangor, Me.,	Sept., 1865
Mattson, Elizabeth	New York City,	Oct., 1865
McDonald, Catharine	Boston, Mass.,	Sept., 1866
McDonough, Elizabeth A.	Russell, Mass.,	Oct., 1864
McKay, Mary A.	River Point, R. I.,	Feb., 1862
Meacham, Mary O.	Westfield, Mass.,	Sept., 1866
Meacham, Morcellia A.	Westfield, Mass.,	Sept., 1866
Merrill, Frances J.	Skowhegan, Me.,	Sept., 1864
Milan, Catharine	Milford, Mass.,	Sept., 1865

Name.	Residence.	Admission.
Miller, Catharine W	Thompsonville, Conn.,	Sept., 1862
Monahan, Anna	Lowell, Mass.,	Sept., 1867
Moore, Eliza A	Derby, Conn.,	Sept., 1863
Moulton, Florette	Biddeford, Me.,	Sept., 1864
Mulcahy, Mary E	Salem, Mass.,	Sept., 1865
Munroe, Betsey A	Rehoboth, Mass.,	Sept., 1862
Murphy, Mary E	Boston, Mass.,	Sept., 1862
Nichols, Marietta C	Roxbury, Mass.,	Sept., 1865
O'Brien, Mary	East Cambridge, Mass.,	Sept., 1865
O'Donnell, Catharine	Stonington, Conn.,	Sept., 1860
O'Hearn, Eliza	Tewksbury, Mass.,	Sept., 1864
Peltier, Ella M	Cambridge, Mass.,	Sept., 1863
Prince, Mary E	Camden, Me.,	Sept., 1860
Perron, Clara	Yantic, Conn.,	Sept., 1867
Platt, Sarah E	Hinsdale, Mass.,	Sept., 1865
Proctor, Emma J	West Gloucester, Me.,	Sept., 1866
Putnam, Almedia M	Oxford, Me.,	May, 1862
Quin, Mary A	Hartford, Conn.,	Sept., 1861
Richardson, Amelia A	Mansfield, Mass.,	Oct., 1866
Richardson, Lauretta J	Mansfield, Mass.,	Sept., 1862
Robinson, Hattie J	Freedom, Me.,	Sept., 1853
Rounds, Sylvia D	Greene, R. I.,	Sept., 1862
Sanborn, Hester E	East Wilton, Me.,	Sept., 1867
Sargent, Lizzie M	Concord, N. H.,	Sept., 1867
Scoles, Rachel A	Augusta, Me.,	Sept., 1864
Smith, Mary J	East Hartford, Conn.,	Sept., 1865
Soper, Ella J	Lowell, Mass.,	Sept., 1866
Spillane, Mary	East Boston, Mass.,	Nov., 1865
Stevens, Mary A	Gloucester, Mass.,	Sept., 1867
Stone, Sally E	Natick, Mass.,	Sept., 1865
Stuart, Harriet N	Wells, Me.,	Oct., 1867
Swett, Persis H	Henniker, N. H.,	Oct., 1863
Taft, Marion L	Worcester, Mass.,	Sept., 1864
Talcott, Lillia M	Bolton, Conn.,	Oct., 1866
Teele, Sarah F	Somerville, Mass.,	Sept., 1862
Tilton, Ellen L	Cheshire, Mass.,	Sept., 1864
Turner, Lucy M	South Coventry, Conn.,	Dec., 1864
Tisdale, Jennie M	North Bridgewater, Mass.,	Sept., 1866
Vincent, Emma A	South Adams, Mass.,	Sept., 1863

Name.	Residence.	Admission.
Walsh, Margaret	Norwich, Conn.,	Sept., 1866
Wentworth, Ella J.	Ipswich, Mass.,	Sept., 1866
West, Anna J.	Coventry, R. I.,	Sept., 1857
Westgate, Abby	Warren, R. I.,	Sept., 1864
Whitney, Hattie M	Gray, Me.,	Sept., 1867
Willey, Florence H.	Lockport, N. Y.,	Sept., 1866
Wing, Nancy A.	Wayne, Me.,	Sept., 1867
York, Mellissa J	Gilmanton, N. H.,	Sept., 1864

SUMMARY.

	Males.	Females.	Total.
Supported by Friends,	10	11	21
" Maine,	22	21	43
" New Hampshire,	8	6	14
" Vermont,	11	2	13
" Massachusetts,	67	45	112
" Rhode Island,	6	4	10
" Connecticut,	28	22	50
" New Jersey,	3	0	3
	155	111	266

Whole number in attendance within the year,	266
Greatest number at any one time,	229
Average attendance during the year,	226

VI.

COMPOSITIONS.

It is a rule of the school that specimens of composition published in our annual Reports, and also the letters sent at stated times to the friends of our pupils, shall receive no correction, except such as their respective authors can make on a careful review when the errors they contain are pointed out by a teacher.

STORIES.

A lady goes into a store. She buys a pretty box. She carries the box to her home. She gives the box to her little girl. The girl opens the box. She finds a doll in it. She is very happy.

Two boys take a large bag. They go to the woods. They see some nuts on a tree. They throw stones at the nuts. The nuts fall. The boys put the nuts into the bag. They leave the woods. A dog chases them. They run. They lose all the nuts.

A girl takes a basket. She puts the basket on her arm. She goes to an apple tree. She finds some red apples under the tree. She puts the apples into her basket. She carries the basket into the house. She gives the apples to her mother. Her mother makes some pies.

HARTFORD, May 5th, 1868.

MY DEAR FATHER AND MOTHER:—I am very well. I am happy. The Asylum is large. Many boys and girls are here. The boys play ball, the girls jump rope. I like bread and butter. I like sugar and milk and coffee. I write in the school. Mr. S. rides on a white horse. Mr. Clark carries Master Clark on his shoulder. I see a lady riding on a white horse. I am eight years old. Mrs. White gives some stockings out of a drawer to Master Clark. Mr. Kennedy chases Master Clark. I hide behind a door.

I see three little pigs in a barrel. I love my father and my mother. They are very kind. I hope my father and my mother are well.

I am your affectonate son, F. H. C.

Lost hearing at two years. In school eight months.

HARTFORD, May 8th, 1868.

MY DEAR FATHER AND MOTHER :—I live in the Asylum. There are some trees near the Asylum. It is pleasant now. The grass is green. The flowers are growing. I like flowers. They are very pretty. In school we write slates. In the morning I wash my face and comb my hair. I work in the shop. I sew shoes. A deaf and dumb girl finds a little pigeon. She carries the pigeon into the Asylum. Mrs. White gives some bread to the pigeon. Mr. Kennedy sees a rat. He calls his dog. The dog chases the rat and kills it. Mr. S. rides on a white horse. I love my father and my mother. I send my love to all.

I am your affectionate son, F. P. B.

Lost hearing at three. In school eight months.

A HUNTER.

A few years ago a wise man went to the city. He went into a store. He bought a gun and some powder and shot. He put the powder and shot into his pocket. He took his gun and put the gun on his shoulder. He went to a depot. He went into the cars. He went to A. in a steamboat. He went to a forest. He walked through the woods. He saw a bear on a large tree. He put the powder and shot into the gun. He loaded the gun with a ramrod. He shot the bear. The bear fell to the ground. He was very glad that the bear fell to the ground. He went to the bear. He carried the bear to a river and threw it into the river. He went to the woods. He saw a deer sleeping. He put the powder and shot into the gun. He loaded the gun with the ramrod. He shot the deer. He went to the deer. He carried it to the steamboat. He put it on the steamboat. He went into the steamboat. He went to Boston in the steamboat. He took the deer out of the steamboat. He put the deer on a wagon. He rode in the wagon home. He took the deer out of the wagon. He carried it into a house. He showed the deer to my mother and brother and sister and father. My brother and sister and mother and father were very glad that the deer was dead. His wife cooked some venison. My brother and sister and father and mother liked to eat some venison. He gave the deer to my father. My father thanked the wise man. He was very glad that the wise man gave the deer to my father. W. R.

Lost hearing at 2 years. In school 16 mos.

STORIES OF MONKEYS.

Several years ago a man lived in South America. He made some baskets. One day he picked them and tied them together. He carried them to the city and sold them. He got money. He went into another store. He bought some hats and caps. He started for home. He walked through the woods. After walking one or two hours, he was very tired. He put the hats and caps on the ground under a cocoa-nut tree. He lay on the ground and fell asleep. While he was sleeping some monkeys saw the man sleeping. The monkeys climbed down the tree and went to him. The monkeys stole them and took them. The monkeys put them on and climbed up. When he awoke he looked for his hats and caps. Soon he saw the monkeys put them on. He was provoked. He shook his fist at the monkeys. The monkeys shook their fists at the man. He threw some stones to the monkeys and the monkeys threw cocoa-nuts to the man. He threw his hat. The monkeys threw the hats and caps on the ground. He picked them and tied them together. He carried them home and was very glad to get them.

Many years ago a clergyman lived in England. He had a monkey. One day he wrote a sermon to prepare for the next day. The monkey came to him. He told the monkey that it should not go to church. The monkey told him that it should go to church. The next day he put clean clothes on and his wife also put clean clothes on. He offered his arm to his wife and went to church. He told his wife to sit down. He went into the pulpit. By and by he was warm and rested for a few minutes. He prayed to God. Many people sang. He preached the sermon. The monkey came up and sat on the sounding-board over the pulpit. It heard him preaching the sermon. It saw him making his gestures. It imitated his gestures. The people saw the monkey on the sounding-board and laughed at it. He saw the people laughing and asked them why they laughed at him. One of the people told him that it preached like him. He told his servant to go up and catch it. So he went up and caught it and carried it home. At noon the people went away. M. J. S.

Congenital. In school three years.

A GENEROUS MAN.

Many years ago, there were two students in a College in Athens. One student was named Septimius and he was a native of Rome. The other student was named Alcander and he was a native of Athens. Alcander was the most eloquent speaker. Septimius was a strong reasoner. Alcander saw a beautiful lady. Her name was Hypatia. He wished to marry her. He admired her. He wished to introduce Septimius to Hypatia.

They visited Septimius and came into the house. The next day Septimius was very sick with a fever and laid on a bed. Alcander and Hypatia wished to visit Septimius. But the doctors told them that they should not go to see Septimius. Alcander understood that Septimius was jealous of Hypatia. Alcander gave Hypatia to Septimius to marry her. He was very glad to marry her and the fever left him. He was very well and married her. They went to Rome. Hypatia's friends were very angry with Alcander. They seized him, robbed him of his property. He became a slave. His master was very cruel to him. Alcander determined to run away. He ran away and went into caves and slept all day. At last he came to Rome. Septimius sat in a chair at court. Alcander walked among many people. Septimius did not know Alcander. In the night he took an urn and went into the cave. He fell into a sound sleep.

Two robbers came near Alcander and quarrelled about some plunder. One robber killed the other. He lay bleeding on the ground. The other robber ran away. Many people saw the dead man near Alcander. They seized Alcander and brought him into the court. They showed him to Septimius. He found that Alcander was guilty. Septimius was going to sentence him, when Septimius knew Alcander and kissed him. Many people were surprised to see him. He went home with Alcander. The other robber was found and sentenced. R. A. S.

Lost hearing at two. In school four years.

AUTOBIOGRAPHY.

My name is Gertie Robin. Early this spring I built a new nest in the branches of a tall ever-green tree, and I began to live in it, in the state of Vermont. I am very glad to live in my new nest in safety. I always make a nest in the country every spring, because it is pleasanter in the country than in the city. I would be afraid of many bad boys in the city. I am sorry that I begin to be old, and am tired of flying around the trees all day. I often fly to my nest and sit in it and rest and sing sweetly. I am proud that I sing sweetly. When I am hungry, I fly and get some worms and eat them and then I sit in my nest again. Last summer I had four little eggs in my nest and I sat on them a long time. In a few weeks they hatched and I had four little birds. Then I flew away to get some worms for them, and I fed them to my young ones. In the evening I put my young ones in my nest and they slept under my wings and they were warm enough because I have many feathers on my body. In a few weeks I taught them how to fly and then they flew away, and I missed them very much. How foolish I was to teach them to fly. But I lived with them again in South Carolina, which is a warm country. We all went there last Fall. They do not live near me now. I told them that I must make a new nest here this spring. Perhaps I shall have four more eggs by and by.

I shall be glad to have some new young ones. But I almost died yesterday. I happened to sit on the fence in the garden. How careless I was! A wild grey cat came near me and caught me, but I pecked his head with my sharp bill and he was afraid and I flew away. By and by I shall fly away to South Carolina again and I shall see my friends. They will be very glad to see me. I shall ask them "Do you wish me to tell you about the North?" They will say "Yes." Then I shall tell them about the grey cat. I shall be very happy to see them again. I am very proud because I have two black and beautiful eyes. I am proud because you admire me. Will you please to give me some crumbs of bread, and I will sing to you. G. A. E.

Congenital. In school three years.

DREAMS.

Our dreams are not sure and they do not tell us truly—But they are sometimes funny. Our Heavenly Father, who is very wise and good, makes us dream. It is very wonderful. I suppose our souls go out of our bodies and work and travel, as we do, while we are lying on our beds at night. We do not know what our dreams will be, and we cannot stop the dreams because God makes us dream steadily. Our dreams tell us many lies and many funny stories in the night. I will tell you some of my dreams. About a month ago I dreamed that it snowed very much, so that it was very deep, and I took my books in a little leather bag, and put on a pair of my Father's boots and bade my family good-bye and said to them that I was going to school on the top of the snow. While I was walking, I saw a large bear following me. I tried to walk very fast, but I fell many times for I dreamed that the road was perpendicular, so that the bear caught me and bit my body. I screamed very loudly, and my Father heard me and shot the bear. By and by I awaked and my dream was awful. I would like to dream my own dreams.

About a year ago I dreamed that many letters were in my bureau, and I was very glad to get them but I awaked and found that my handkerchief was in my hand, it seemed to be a letter. I was disappointed. Last night I dreamed that I was walking along the bridge near my home and met my friends. They were all surprised for I told them that Mr. S. had expelled me, but I awaked and I was here in my bed. I was very glad. If Mr. S. should expel me truly, I should be very much ashamed.

MY WISH.

If I could have my wish, I would be a book. I would be a very large book:—larger than these books. I would not be printed, but I would be created, and would put language on it myself. I would never be worn out, If any person did not take care of me, and keep me clean, I would not allow him to read me. I would run to the good people and let them read me always. I would be one of the wise books, and would cause the people to admire me for my language which would be very simple and good. I would be very useful, and would not want to have any person dislike to read me. I would walk to people and speak my language, so that they could hear me. I would shut myself when they had done reading me. I would have one trillion of pages so that the people would never finish reading me. I would not want to be on a shelf, but I would be on a table. If any person forgot me, I would follow him, and walk with him, for I would not want to be put in a trunk. I would never want to eat nor drink, but I would breathe and walk with people. I would want to have people believe me, that I always tell them truly about everything which happens in ancient or modern times. I would wish to live one thousand years. I would want to go to heaven. I would not want to have any fable-books go to heaven. I would let the Bible go to heaven, because it always tells the people truly about important things. Before I died, I would go up and down, and would tell every person that this was the last time to read me. I would let good persons go with me to heaven and read me in heaven. P. S.

Congenital. In School five years.

A WEDDING.

One day a bird whose name was Jenny Wren, stood on a tree. A bird whose name was Cock Robin, came to her. He said to her "Please may I marry you?" She said "Yes." Robin flew away and bought a yellow dress for Wren. He came to Wren's house and knocked at the door. She went to the door and opened it. She led him to the parlor and he sat by the window and told her that he had brought a yellow dress to her. She blushed behind her fan. He went away and met Lark and Sparrow and said to them "please come to see me this afternoon for I shall be married." They told many birds. Rook, who was a preacher walked with Jenny Wren. Many birds came to their wedding party. Rook said to Robin "Will you marry Wren?" Jenny Wren sung very sweetly. Robin married her and they were happy. They went to their house. Some birds were on the tree and sung to honor Robin and Wren. Robin and Wren ate cherry pies which were very sweet. After supper, they walked in the woods. Sparrow was jealous of them. He had his arrows and bows and shot Robin so that he died. Jenny Wren wept for him. She pulled the arrow from his heart. When the birds heard that Robin was dead, they mourned. They carried him to his house and put him in a beautiful coffin and had a funeral. Then they caught Sparrow and hanged him. Poor Widow Jenny Wren. E. H.

Lost hearing at two and a half years. In school five years.

MY WISH.

If I could have my wish, I would be a noble oak tree. Yes! Such as shelters the weary traveller from the mid-day sun. Such as the weary cattle find rest under, and such a tree as is honored above all trees. I would, on first coming into the world, be a small shoot, not one-third as thick as my little finger, then I would grow on year by year until I became in general sense a tree, but only a quarter the size I intended to be. I should not be much thought of until I had lived about one generation, then I should begin to be honored. The oldest inhabitants, would tell their children and grand-children of my life, of my nobleness, and how often they had played under me in their youth, and fastened their swings to my thick branches. Now they being too old to enjoy such things, should still love to sit under me, and watch the young children play. Yes! I should often bring tears to their eyes, when I reminded them of their happy youth. I would in summer clothe my branches with the thickest and greenest of foliage, and in winter give my greatest strength to my limbs, to help them bear the stormy winds and heavy snow and ice. I should learn to bear the cold winds and storms which would beat against me. I would learn to bear them all as a young man his temptations, a christian his difficulties. I would show myself so proud and noble that every one would say "Noble oak! honored above all."—Yes! I would do all this and more; I would show still greater ambition. I would spread forth my branches to the North, to the South, to the East and to the West. I would outgrow all the other trees in height, thickness and strength. I would grow on until no body knew how old I was. I would be the grand old oak which could bear a hurricane. I would be so great and fine that all who knew my age and nobleness would say—"woodman! spare that tree." I would be the noble oak under which many had told their tales of love, and confessed their broken vows. Under which merry children had played and the aged had rested their limbs weary with cares. The tree which birds could build their nests in with out fear. The largest birds should rest upon me and build their nests in my branches. I would spread my root out in the earth a great distance. I would tell all the other trees, who had not lived half my age of the past generations, of their frivolous fashions, their modes of living and of their goodness and wickedness. I would teach them all to be good and noble, and to shun all evil. None should want for shelter from the raging blast or the scorching heat while I lived. I would do wonders if I was an oak tree—such wonders as an oak has never been known to do before and never will do hereafter.

C. D.

ASTRONOMY.

No one can look at the heavenly bodies through a powerful telescope, without experiencing feelings of mingled wonder and awe. To the naked eye, the stars appear to be but mere specks dotted here and there in the blue canopy far above us. Considering the immense distance of the stars from the earth, it seems almost incredible that they can shine with such brilliancy. But the stars are not in reality the insignificant objects that they appear to be. When viewed through telescopes they are seen to be very large bodies.

The planet Jupiter is said to be a thousand times larger than the earth, and consequently is of great size. The earth itself is but a mere atom in comparison with the enormous size of the sun. It has been proved to be a million times smaller. A pinhead placed by the side of a large ball, would be a good illustration of the different sizes of the sun and earth.

With the aid of large refracting telescopes and other powerful instruments the stars and heavenly bodies have been examined and studied. The results of these observations are truly wonderful, instead of the few thousand stars visible to the naked eye many millions can be discerned. The faint misty specks resembling fog seen among the constellations are discovered to be composed of innumerable stars, very small in appeararance and close together. The numerous stars called "Double Stars" which are so near to each other that to the naked eye they seem as one star are seen by the telescope to be separated by immense distances.

By close inspection spots have been discovered on the surface of the sun much larger than the earth. The light and heat which appear to us to come directly from the sun do in fact proceed from self-luminous clouds far above its body. These clouds bestow upon the earth more heat in summer than in winter. This arises from the fact that the North pole of the earth is turned towards the sun in the summer months and is turned away from it in winter. Consequently this not only allows us longer days but gives us more heat in summer than in winter. The sun which is really a star, appears to move in a vast circle around the earth. But the earth in reality turns about on an axis and completes a rotation in a day and night. The sun is attended on its course by a system of planets. The planets are movable stars which revolve around the sun, but the fixed stars are supposed to be suns which bestow upon other planetary systems the genial influences of their light and heat.

Some of the planets shine with great splendor and brilliancy. There are eight planets of which Venus and Jupiter are the brightest and most beautiful. These two planets are the most conspicuous of the whole planetary system. The planet Saturn shines with a dull pale light, and is of a dull red color. Around Saturn and wholly detached from the body of the planet, is a vast luminous ring, many thousands of miles in diameter. When we consider the enormous size of Jupiter we are filled with great wonder. It is difficult and perhaps absolutely impossible to realize the fact of one of the stars being larger or even as large as the earth. Venus which is the most beautiful planet in the whole heavens, is a little smaller than the earth and can easily be discerned with the naked eye.

Upon the surface of the planet Mars, large bodies of water and continents have been discovered. The bright beautiful moon, by whose generous light we are enabled to distinguish objects by night, though appearing no larger than a ball, is of great size and has been discovered to contain numerous mountains, by which its surface is much diversified.

The light and heat which the sun and other heavenly bodies bestow upon the earth, furnishes a striking illustration of the goodness and benevolence of our blessed Creator. W. L. H.

IS IT RIGHT TO MARRY FOR MONEY?

[*Scene I.—A young lady's boudoir in a handsome mansion.—Afternoon.—Lily seated in a deep bay window, embroidering.—Enters her intimate friend Mabel, in a high state of excitement.*]

Mabel. Oh Lily! I have the greatest little piece of news to tell you. The beautiful Miss M. is going to be married to that horrid Mr. T. and nearly all the fashionable world is at the height of excitement, and only think, there is a whisper that it is all for money!

Lily. Mabel! for money! did you say it is all for money? Well, it is very foolish to marry for money. Isn't it so, ma chere?

M. Ah! my dear, I am sorry to say I must differ with you in this. I am in favor of marrying for money, provided the man is old and of a weak constitution, and not likely to survive long!

L. Why, Mabel, for shame! How heartless you have grown—you who used to have such romantic notions when at school. What has caused such a change in you, darling?

M. My dear girl, I have learned that such a thing as love, is well enough for a brief time, but when you come to real life, you will find that it is a different thing. How absurd it is to think of such a thing as love in a cottage, without the means to procure the common conveniences of life. Such billing and cooing will do well enough for the sentimental,

"But give me a sly flirtation,
By the light of a chandelier,
With music to play in the pauses,
And nobody very near."

L. Indeed you are greatly mistaken about love. You talk as if you never felt the pangs of true love. But if you knew what love was, you could not help echoing my words: "How sweet it is to love and to be loved."

[*Enter a servant bearing a silver tray with a perfumed note for Lily.*]

M. (Eagerly) is it from Miss M.?

L. (Reading.) Oui, ma aime.

M. What does she say?

L. She asks the favor of my company at her wedding.

M. Shall you not go, my darling?

L. No, dear, I must decline it, as I do not want to see her take upon herself the burden of future misery, as I know this marriage will produce.

M. Well, then, my dear, I must go without you. You have such queer ideas about marriage. Good evening.

[Exit Mabel.]

Scene II.—same room—five months after the wedding.

L. Now, Ma chere, hear what I am going to say. Well, I heard a rumor that Mrs. T. is very unhappy and miserable because of her husband, who is getting cross and unlovable as he is getting older every day, though he will probably live many years, for he has such a strong constitution. What is your opinion of marrying for money now? [with a sneer.]

M. I am really sorry if it is true, but notwithstanding it has not yet weakened my faith in money. Mrs. T. who was present at the late grand ball at Music Hall, looked as happy as any one in the room! besides she was covered with jewels the gifts of her devoted lord. I am sure I did not see the least traces of grief or misery upon her face. I think the rumor must have been false.

L. But if you could see behind the curtain, you would think differently. I suppose "to keep up appearances" is her motto. I do really pity her, but she knew better when she sold herself for money.

Scene III.—five months later—Mabel and Lily driving down Fifth avenue.

L. Now, Mabel, did you see Mrs T. just now, in her splendid mansion, flattening her nose against the window of the drawing room, with such a despairing look—such a wild longing in her eye, that I know she has not lived a happy life, in spite of wealth which could buy anything she wished. The riches which she thought would buy happiness, are like the apples of Sodom. Mabel, what do you think of marrying for money?

M. My dearest girl, I must confess that I have made a fatal mistake in thinking that money without love can give happiness. According to Mrs. T.'s confession which she made to me a few days ago, she says money, without love, is the source of the greatest unhappiness. She says that she would rather be the wife of a poor man whom she loved, than the rich man's darling whom she hates. Therefore I hope we shall never be so foolish as to marry for money.

Lily, E. D. C.
Mabel, M. A. McK.

TERMS OF ADMISSION.

I. The Asylum will provide for each pupil, board, lodging and washing, the continual superintendence of health, conduct, manners and morals, fuel, lights, stationery and other incidental expenses of the school-room; for which, including TUITION, there will be an annual charge of one hundred and seventy-five dollars.

II. In case of sickness, the necessary extra charges will be made.

III. No deduction from the above charge will be made on account of vacation or absence, except in case of sickness.

IV. Payments are always to be made six months in advance, for the punctual fulfillment of which, a satisfactory bond will be required.

V. Each person applying for admission, must be between the ages of EIGHT and TWENTY-FIVE years; must be of a good natural intellect; capable of forming and joining letters with a pen, legibly and correctly; free from any immoralities of conduct, and from any contagious disease.

Applications for the benefit of the legislative appropriations in the States of Maine, New Hampshire and Massachusetts, should be made to the Secretaries of those States respectively, stating the name and age of the proposed beneficiary, and the circumstances of his parent or guardian. Applications as above should be made in Vermont, Rhode Island and Connecticut, respectively, to his Excellency, the Governor of the State. In all cases, a certificate from two or more of the selectmen, magistrates, or other respectable inhabitants of the township or place to which the applicant belongs, should accompany the application.

Those applying for the admission of *paying pupils*, may address their letters to the Principal of the Asylum; and on all letters from him respecting the pupils, postage will be charged.

The time for admitting pupils is the *second Wednesday of September*, and at no other time in the year. Punctuality in this respect is very important, as it cannot be expected that the progress of a whole class should be retarded on account of a pupil who joins it after its formation. Such a pupil must suffer the inconvenience and the loss.

It is earnestly recommended to the friends of the deaf and dumb, to have them taught to write a fair and legible hand before they come to the Asylum. This can be easily done, and it prepares them to make greater and more rapid improvement.

When a pupil is sent to the Asylum, unless accompanied by a parent or some friend who can give the necessary information concerning him, he should bring a written statement embracing specifically the following particulars:

1. The name, in full.
2. Post office address, and correspondent.
3. Day, month and year of birth.
4. Cause of deafness.
5. Names of the parents.
6. Names of the children in the order of their age.
7. Were the parents related before marriage? If so, how?
8. Has the pupil deaf-mute relatives? If so, what?

The pupil should be *well-clothed;* that is, he should have both summer and winter clothing enough to last one year, and be furnished with a list of the various articles, each of which should be marked. A small sum of money should also be deposited with the Steward of the Asylum, for the personal expenses of the pupil not otherwise provided for.

Careful attention to these suggestions is quite important.

There is but one vacation in the year. It begins on the last Wednesday of June, and closes on the second Wednesday of September. It is expected that the pupils will spend the vacation at home. This arrangement is as desirable for the benefit of the pupils, who need the recreation and change of scene, as for the convenience of the Institution, thus affording opportunity for the necessary painting, cleansing, &c. The present facilities for travel, enable most of the pupils to reach home on the evening of the day they leave Hartford. Every pupil is expected to return punctually at the opening of school, on the second Wednesday of September.

On the day of the commencement of the *Vacation*, an officer of the Asylum will accompany such pupils as are to travel upon the railroads between Hartford and Boston, taking care of them and their Baggage, on condition that their friends will make timely provison for their expenses on the way, and engage to meet and receive them immediately on the arrival of the *early* train at various points on the route previously agreed on, and at the station of the Boston and Worcester Railroad, in Boston. A similar arrangement is made on the Connecticut River Railroads, as far as to White River Junction. No person will be sent from the Asylum to accompany the pupils on their return, but if their fare is paid, and their trunks checked to Hartford, it will be safe to send them in charge of the Conductor.

EIGHTH ANNUAL REPORT

OF THE

EXECUTIVE COMMITTEE

OF THE

HARTFORD HOSPITAL;

PRESENTED TO THE CORPORATION,

AT THEIR

ANNUAL MEETING, APRIL 13, 1868.

HARTFORD:
CASE, LOCKWOOD AND BRAINARD, PRINTERS.
1868.

FORM OF BEQUEST.

Item. I give and bequeath to the Hartford Hospital, in the city of Hartford, the sum of ——— dollars to be paid by my executors out of my real or personal estate, as soon as the settlement of my affairs will permit, to the Treasurer of the said Institution for the time being, in trust, to be applied by the Directors thereof to the humane purposes of said Institution.

OFFICERS

OF THE

HARTFORD HOSPITAL,

FOR 1868.

JAMES B. HOSMER, *President.*
ALBERT DAY, *Vice-President.*
JAMES B. HOSMER, *Auditor.*
FLAVIUS A. BROWN, *Secretary and Treasurer.*

EXECUTIVE COMMITTEE.

EDSON FESSENDEN,
GEORGE B. HAWLEY,
CHESTER ADAMS.

PHYSICIANS.

SAMUEL B. BERESFORD, M. D.,
GURDON W. RUSSELL, M. D.,
GEORGE B. HAWLEY, M. D.,
E. K. HUNT, M. D.,
A. W. BARROWS, M. D.,
P. M. HASTINGS, M. D.,

HOUSE PHYSICIAN.

DANIEL S. BROMLEY.

LIBRARIAN.

GURDON W. RUSSELL.

STEWARD.

W. P. CORRIN.

MATRON.

MRS. CORRIN.

DIRECTORS CHOSEN AT THE ANNUAL MEETING, APRIL, 1868.

JAMES B. HOSMER,
CHAS. R. CHAPMAN, *ex-officio,*
ALBERT DAY,
S. S. WARD,
E. A. BULKELEY,
G. W. RUSSELL,
CHESTER ADAMS,
G. B. HAWLEY,
JAMES G. BOLLES,
JAMES GOODWIN,
EDSON FESSENDEN,
ERASTUS COLLINS,
CHARLES M. POND.

VICE-PRESIDENTS FOR LIFE BY SUBSCRIPTION OF FIVE HUNDRED DOLLARS AND UPWARDS, ALSO, DIRECTORS FOR LIFE.

T. M. ALLYN,
*A. S. BECKWITH,
CHARLES BOSWELL,
LEE & *BUTLER,
GEO. M. BARTHOLOMEW,
JAMES G. BOLLES,
GEORGE BEACH,
J. SEYMOUR BROWN,
*SAMUEL COLT,
LEONARD CHURCH,
GEO. H. CLARK,
Mrs. SAMUEL COLT,
FRANCIS B. COOLEY,
CALVIN DAY,
JAMES GOODWIN,
JAMES B. HOSMER,
EDMUND G. HOWE,
H. & W. KENEY,
C. C. LYMAN,
WILLIAM T. LEE,
*SAMUEL MATHER,
J. M. NILES,
J. S. NILES,
H. A. PERKINS,
DANIEL PHILLIPS,
THOMAS SMITH,
*JOSEPH TRUMBULL,
SAMUEL L. TUTTLE,
WILLIAM F. TUTTLE,
WOODRUFF & BEACH,
*THOMAS S. WILLIAMS,
*DAVID WATKINSON,
*JOHN WARBURTON,
ROBERT WATKINSON,
MARY A WARBURTON,
OSWIN WELLES,
E. M. WATKINSON.

DIRECTORS FOR LIFE BY SUBSCRIPTION OF TWO HUNDRED DOLLARS AND UPWARDS.

CHESTER ADAMS,
C. H. BRAINARD,
CHARLES BENTON,
HIRAM BISSELL,
BIRCH & BRADLEY,
J. G. BATTERSON,
E. A. BULKELEY,
*THOMAS K. BRACE,
LUCIUS BARBOUR,
CASE, TIFFANY & CO.,
ELISHA COLT,
NEWTON CARTER,
H. KENDALL CARTER,
*WILLIAM L. COLLINS,
ERASTUS COLLINS,
CHARLES COLLINS,
DANIEL P. CROSBY,
CHENEY BROTHERS,
JULIUS CATLIN,
AUSTIN DUNHAM,
LEONARD DANIELS,
DAY, GRISWOLD & CO.,
JAMES DIXON,
EDSON FESSENDEN,
*EBENEZER FLOWER,
*S. W. GOODRIDGE,
JAMES GOODWIN,
*ISAAC HILLS,
HUNGERFORD & CONE,
G. B. HAWLEY,
NELSON HOLLISTER,
Rev. JAMES HUGHES,
*H. HUNTINGTON,
E. N. KELLOGG,
GEORGE S. LINCOLN & CO.,
*SIMEON L. LOOMIS,
*Mrs. JOSEPH MORGAN,
ROLAND MATHER,
J. & M. MERRIMAN,
*SAMUEL MATHER,
*WILLIAM MATHER,
*JOHN M. NILES,
*C. F. POND,
CHARLES M. POND.
IRA PECK,
*FRANCIS PARSONS,
GUY R. PHELPS,
Miss ESTHER PRATT,
E. C. ROBERTS,
ROGERS BROTHERS,
*ELISHA K. ROOT,
*E. G. RIPLEY,
CHARLES SEYMOUR,
*Mrs. ELIZA K. SHEPARD,
*WILLIAM L. STORRS,
O G. TERRY,
ISAAC TOUCEY,
*MILES A. TUTTLE,
WILLIAM W. TURNER,
SAMUEL S. WARD,
N. M. WATERMAN,
GEORGE M. WELCH,
*JAMES H. WELLS,

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* Deceased.

EIGHTH ANNUAL REPORT

OF THE EXECUTIVE COMMITTEE OF THE HARTFORD HOSPITAL TO THE CORPORATION, AT THEIR ANNUAL MEETING,

APRIL 13TH, 1868.

In presenting the Eighth Annual Report of the Hartford Hospital, it is with feelings of peculiar gratification in the providence of God for the many blessings which he has bestowed upon us from the foundation of the Institution. We would solicit the prayers of a Christian public that this charity may be sustained and the means blessed in our efforts to heal the sick and relieve suffering.

The Hospital was first opened for patients August 1st, 1860, from that time to the present there have been admitted to the Institution 1,367 patients, of whom 974 have been discharged recovered, 88 improved, 66 removed stationary, 183 died and 55 are at present remaining. There have been admitted into the Institution during the past fiscal year 251 patients, 162 males and 89 females. There have been 306 patients under medical treatment, 191 males, 115 females. Of these 183 have been discharged recovered, 16 improved, 15 removed stationary, 36 have died.

A more particular account of the patients together with the deaths will be found in the steward's report.

At the commencement of the year there were 55 patients, 29 males and 26 females ; at the close 56 patients, 32 males and 24 females ; the largest number at any one time was 63, the smallest number 38. Of those admitted 217 were temperate and 34 intemperate habits, 119 were born in the United States, 132 were of Foreign birth. Patients have been treated from 105 different towns of the State.

In examining the previous reports it will be seen that a large average of patients admitted were temperate in their habits, and that the Hospital has carried out the principles for which it was erected and has provided for the worthy destitute sick.

Notwithstanding our greatest efforts to economize, the expense has yearly exceeded our income. At the close of the last fiscal year this accumulated debt was $1,979.41. The current expenses of the last year have exceeded the income $521.13. This amount added to the previous debt leaves our present indebtedness from current expenses, $2,500.54.

Many thanks are due from the Hospital to a few of our benevolent citizens who have generously come to our relief. Charles Hosmer has paid $500 to the Hospital, James B. Hosmer $250, and a friend $100, Hartford, Providence and Fishkill Railroad company $50, and $2,664.65 has been received from other sources. This has enabled us to cancel the debt from current expenses. $926.56 will be received from the estate of Henry Taylor. Hon. Thomas S. Williams remembered the Hospital by giving in his will $5,000. This amount, in addition to his many liberal dona tions previously presented, has endeared his name to the sick and destitute.

Five hundred dollars has been received from the estate of Matilda Adams. These two donations, which amount to $5,500, have been added to our permanent fund.

The permanent fund is as follows:

Watkinson Fund,		$40,000
Beckwith	“	9,000
Adams	“	3,000
Utley	“	1,000
Tuttle	“	1,000
Pond	“	2,000
Parsons	“	1,000
Smith	“	1,000
Flower	“	5,000
Grou	“	500
Williams	“	5,000
Matilda Adams Fund,		500
Total amount of permanent fund,		$69,000

INCOME FROM FUND.

Watkinson,	$2,711.35
Beckwith,	744.52
Adams,	248.19
Utley,	66.50
Tuttle,	60.00
Pond,	120.00
Parsons,	66.50
Smith,	80.00
Williams,	222.07
Flower,	175.00
Total receipts from Fund,	$4,494.13

There has been received from the State appropriation $2,119.24. The State has paid for the support of Connecticut discharged soldiers $2,305.72. From pay patients $3,472.43. The income from the fund is $4,494.13. Received from the late Mrs. Joseph Morgan $175 for a free bed for one year.

The whole receipts, not including donations, amount to $12,391.52. The disbursements for current expenses amount to $12,912.65. By these figures we learn that the Institution would be involved in an annually increasing debt if our benevolent citizens did not yearly remember us by their liberal donations. The necessity of yearly contributions cannot be too strongly urged upon our citizens. Without this yearly contribution this charity cannot be sustained. Our fund must also be increased as our yearly average of patients increase, that we may not be compelled to take the last cent from our poor sick patients to liberate the Institution from our annual debt.

The current expenses of the last year are $521.13 greater than the income, not including private donations. The average amount received from the State for each patient was $1.08 per week. The average amount paid by each patient was $1.68 per week.

There was received from the town of Hartford, $1,005.97, at the rate of $1.50 per week to December 1st, 1867, and after that $2.00 per week. The average cost of each patient was $5.57 per week not including medical attendance or rent of building.

At first the necessity of a Hospital was doubted by many. From the commencement the average number of inmates has increased yearly. The great relief to the sick and destitute has been so decided that it becomes a necessity and must be sustained. These persons are human, and must not be left to suffer uncared for in a Christian land. Humanity demands that the expense should be paid, either by public charity or private donation.

Private charity in many cases is misapplied and bestowed upon those who have learned to impose upon their benefactors, by assuming the appearance of sickness, whilst the worthy sick are overlooked in their retirement. Under the constant care of a well regulated Hospital, and a watchful eye to guard against impostors, these persons can be managed and restored to health, in a much shorter period, or their impositions detected.

The expense of providing for these persons in a Hospital is much less, because the money is not squandered, but economically appropriated for the honest relief of suffering, and hasty restoration to health.

The experience of the civilized world has proved the economy and importance of Hospitals. If the Hospital should cease to operate and its wards be vacated of its occupants, the cost would be greatly increased in providing for them individually, by private charity or pauper work houses. It is a burden that is placed on community and there is no escape from its responsibility. The intelligent sick, fallen from respectable positions by the cruel hand of misfortune, without any fault of their own, cannot be passed by in a Christian community and left to die. There are many who have faithfully spent their all in the struggles of life who only ask for some place where they can lie down and die in peace.

We extend our pleading hands to those whom God has blessed with abundance; to the town whose duty it is to provide for the sick and destitute, and to the State who is the father and protector of her citizens, that this charity may be sustained.

If any class in community is deserving of State charity, it is the soldier who has lost his limbs and destroyed his health in fighting the battles of his country. The soldier, if not willing, is forced to fight these battles, and that country is not worthy the name of a nation who will desert them in their maimed and broken down condition, and not provide for them a soldiers' home. It is an obligation that every nation performs. Other States provide for the sick, maimed and destitute soldiers. New York State appropriated last year $75,000; erected a hospital for their accommodation, and provided for them in their distress and destitution. Wisconsin appropriated last year $300,000 for the support of charitable institutions. These charities are dispensed in a more economical and judicious manner in well-regulated institutions, and the same amount relieves a much greater degree of suffering, than when distributed by private individuals.

The State of Connecticut has appropriated during the last year $2,305.72 for the support of her sick soldiers at the Hartford Hospital, and compelled the Hospital either to reject them from her wards, or take $619.37 from the charity fund for their support. They have compelled the Hospital to solicit money and erect buildings for the accommodation of these soldiers.

The Hospital is laboring to relieve the towns from the burden of providing for the destitute sick.

During the past year 42 soldiers have been admitted to the Hospital. They have been at the Institution 480 weeks. At the commencement of the year there were in the Hospital 15 soldiers —at the close there were 12. When received into the army they were perfect in all their physical powers. After passing through the several campaigns, they come to us in their maimed, sick and debilitated condition, and ask admission to our wards. The Hospital has never refused admissions to soldiers. During the fiscal year of 1866–67, the Hospital paid $698.69 more than it received for the care of Connecticut soldiers, without any charge for medical attendance, or expense of general management. The legislature of 1866 granted to the Hospital $6.00 per week for the soldiers, which was less than the average cost of each patient. The legislature of 1867 reduced this price to $3.00 per week. The soldiers have been provided for at the Hospital from July 1st, 1867, 241 weeks, at $3.00 per week, at a cost to the State of $723. It cost the Hospital $5.57 per week to provide for these soldiers, without any compensation for rent of building, medical attendance and general management. At our present average cost it has been compelled to support these soldiers at a loss of $619.37.

During the last two years the Hospital has paid from the charity fund $1,318.06 more than it has received from the State for the support of Connecticut soldiers. Neither does this include the constant demand of soldiers from other States who have from the commencement of the war continually occupied our wards. During the last fiscal year there have been 13 soldiers from other States who have occupied the beds 125 weeks at a loss to the Institution of $633.75. These soldiers have never been refused admission, neither have we received any compensation from the State for their support.

The necessity of our enlarged accommodation is made in part by the soldier. The State at first was willing to make liberal provision when they supposed there was a large number who required assistance; but when they learned the number requiring that assistance was very small, they not only refused aid to enable us to enlarge our building, but compelled us to provide for these soldiers for $3.00 per week, when our average cost was $6.00 per week, or drive them from our wards. It is not right that Connecticut should ask the Hospital to use their charity funds to provide a soldiers' home.

Since our last report, the work has continued on the south wing. This wing is 113 feet long, varying in width from 31 feet to 44 feet. This wing is two stories high, 15 feet in the clear, with a basement of 9 feet, and a cellar of 7 feet. The basement is above the ground, and the cellar well lighted. The walls of this wing are completed, and enclosed by the roof and windows. There are two cross wings two stories high, extending at right angles with the main building 45 feet long and 28 feet wide, which will connect the main buildings with other wings when erected. Under each of these wings is a cellar. The walls of these wings are completed and enclosed by the roof and windows. The stone, brick, timber, and windows are on the ground to be used in the completion of the other wing. The walls are built of Portland stone, first class rubble work, each stone lying on its natural bed, corresponding to the original building. The roof is slate.

There is not a crack or settling of the walls of the Hospital, either in the old or new part. There is about one quarter more stone laid in the present buildings erected than there was in the original buildings, and the capacity is one quarter greater.

The cost of the original building was $33,000. This was erected when labor and material was less than one-half the price of the present time. We have spent on our building during the present year $41,382.24. Last year $3,390.33 was spent, consequently the new building has cost thus far $44,872.57. There are about $1,500 outstanding bills. The completion of the cross wing now being erected, including roof and windows, will amount to about $4,000.

The building fund at present amounts to $27,000. It will cost $77,000 to erect these wings.

We ask our citizens and the public whether $50,000 shall be subscribed to complete these wings, or whether we shall let the buildings stand with a debt of $23,000 which was necessarily incurred to enclose them with roof and windows, and thus lose the use of the wings so much needed for the successful operation of the Institution.

As the materials are on the ground for enclosing the other cross wing, economy will demand that the walls be erected and the building enclosed the present spring.

In the part now erecting, there are to be ten private rooms, furnished with all the comforts and conveniences that a sick room may require.

To each room is attached a water-closet and bath-room. They are well warmed and thoroughly ventilated, and designed for persons who are willing to pay for extra accommodations. The want of these rooms is seriously felt, as a constant demand is made for them. In our present crowded condition it is impossible to manage the Hospital judiciously. Its full capacity at present is 44 patients. Each ward accommodates 20, and four private rooms one patient each. At present there are 67 patients in the Institution, which compels us to crowd the wards contrary to every principle of health, and leaves no beds unoccupied for extra demand which might occur from unforeseen accident.

There are ten persons employed in its management. To accommodate this large family we have no laundry and are compelled to occupy a part of the kitchen for laundry purposes. With a range crowded to its fullest capacity for culinary purposes, we are compelled to bake about twenty-five loaves of bread daily. There is no suitable cellar for vegetables. The sleeping-rooms for domestics are insufficient, and the store-rooms for groceries, meats, flour, &c., are not arranged for so large a family. The oven, cellar, sleeping apartments for domestics, and store-rooms are all in the part now being erected.

During the last year there have been 14 births in the Institution. Our accommodation at present for this class of patients is limited. We are compelled to place the children in the crowded wards, which is contrary to every principle of classification, and is troublesome to the patients. This class of patients are yearly increasing, and the extra accommodation in the new wing is much needed to provide for this demand.

Your committee have labored most faithfully, and given their services freely, that these wings might be erected in the most desirable manner, and with the greatest economy. The crowded condition of our present wards render it necessary either to refuse patients, or provide other accommodation for the relief of the sick.

These are some of the reasons that urged your committee to commence the erection of the new wings, trusting the same liberal charity, both from the State, and from private individuals, which has been so generously bestowed, would sustain us in our labors of mercy.

After enclosing the cross wing, at a cost of about $4,000, we shall be compelled to stop all operation on the building, until means are furnished to proceed with its completion.

In the Steward's Report will be found many interesting tables in regard to the patients which have been continued from the commencement of the Institution; also a list of donors to whom the Institution is especially grateful, trusting the list will increase as our necessities are known to the public.

During the last year Charles F. Pond has passed away. He was blessed with a powerful mind, together with a large heart. His generous deeds and liberal charities will long be remembered by the poor, sick, and destitute.

The free services of the surgical and medical staff should not be forgotten. As the number of patients yearly increase, this service becomes more burdensome. It has been performed in a most cheerful and satisfactory manner.

In closing this report, we would make an earnest appeal to the legislature. The various towns of the State have an especial interest in the Hospital. Applications are continually made from all parts of the State for admission of patients who require the most skillful surgical operations, and the constant attendance and watchful care which is peculiarly furnished in a Hospital. Here they receive, free of extra expense, the combined consultation of our medical and surgical staff. It is not right for these towns to tax the City of Hartford to sustain alone this heavy burden.

We most earnestly request our citizens to visit the Institution, that they may become familiar with all the principles on which charity is bestowed, for *they* must decide whether the Hospital shall be sustained.

EDSON FESSENDEN,
G. B. HAWLEY,
CHESTER ADAMS,
Executive Committee.

STEWARD'S REPORT.

Report of the Steward of the Hartford Hospital, to the Executive Committee, for the year ending February 29th, 1868 :

Receipts of the Hartford Hospital for the fiscal year, ending February 29th, 1868.

Received from the State appropriation,		
April 1st, 1867,	$510.43	
July 1st, 1867,	535.23	
October 1st, 1867,	527.00	
January 1st, 1868,	546.58	
Total,		$2,119.24
Received from the State for Soldiers,		
April 1st, 1867,	$1,037.15	
July 1st, 1867,	654.85	
October 1st, 1867,	252.86	
January 1st, 1868,	342.86	
Burials,	18.00	
Total,		$2,305.72
Board of Patients,		3,472.43
Watkinson Fund,	$2,711.35	
Beckwith “	744.52	
Adams “	248.19	
Tuttle “	60.00	
Utley “	66.50	
Pond “	120.00	
Parsons “	66.50	
Smith “	80.00	
Flower “	175.00	
Williams “	222.07	
Total receipts from Fund,		$4,494.13
Total Receipts,		$12,391.52

March 1st, 1867, there was credited to the Hartford Hospital the balance due from the State, - - - -	$445.19	
State appropriation of 1867, - -	2,000.00	
Total, - - - -		$2,445.19
Drafts paid the Hospital upon orders of the Governor during the fiscal year, -		2,119.24
Balance due the Hospital, March 1st, 1868,		$325.95

Disbursements of the Hartford Hospital, for the fiscal year, ending February 29th, 1868.

Breadstuffs, - - -	$1,188.77	
Butter and Eggs, - - -	964.16	
Barn, - - -	178.37	
Furniture, Bedding and Crockery, -	663.73	
Fuel, - - - -	1,341.73	
Groceries, - - - -	1,347.23	
Gas, - - - -	277.78	
Insurance, - - - -	97.20	
Ice, - - - -	47.85	
Medicine, - - - -	842.84	
Meat and Fish, - - -	2,811.84	
Miscellaneous, - - - -	270.79	
Printing Reports, - - -	119.80	
Repairs, - - - -	251.18	
Salaries, - - -	600.00	
Vegetables, - - - -	427.24	
Wages, - - - -	1,267.78	
Washing and Soap, - - -	154.36	
Water, - - - -	60.00	
Total Disbursements, -		$12,912.65

NUMBER OF PATIENTS

WHO HAVE RECEIVED THE BENEFITS OF THE HOSPITAL DURING THE FISCAL YEAR ENDING FEBRUARY 29, 1868.

	Males.	Females.	Total.
The whole number of patients in the Hospital at the beginning of the year, - - -	29	26	55
Admitted during the year, - - - -	162	89	251
Total number in the course of the year, -	191	115	306
Of this number there have been discharged,			
Recovered, - - - - - -	128	55	173
Improved, - - - - - -	9	7	16
Removed, - - - - - -	6	9	15
Died, - - - - - - -	16	20	36
Total discharged during the year, - -	159	91	250
Remaining in the Hospital March 1, 1868, -	32	24	56
Whole number admitted to March 1, 1868, -			1,367
Whole number discharged to March 1, 1868,			1,311
Whole number remaining to March 1, 1868,			56

GENERAL STATISTICS.

YEAR.	Admitted.	Whole number under care.	Discharged.	Recovered.	Improved.	Removed stationary.	Died.	Greatest number on any day.	Least number on any day.	Remaining at end of year.	Average number for year.
1860–1	45	45	36	23	8	2	3	14	1	13	12
1861–2	258	271	223	159	27	14	23	85	14	57	27
1862–3	107	164	145	105	16	6	18	57	11	23	18
1863–4	157	180	132	93	8	7	24	45	21	31	27
1864–5	132	163	142	102	2	9	29	31	20	21	27
1865–6	196	217	172	133	5	8	26	49	21	45	35
1866–7	221	266	211	176	6	5	24	59	29	55	44
1867–8	251	306	250	183	16	15	36	63	38	56	50
Totals,	1367		1311	974	88	66	183				

Monthly Admissions from March 1*st*, 1867, *to March* 1*st*, 1868.

	Males.	Females.	Total.		Males.	Females.	Total.
March,	11	3	14	October,	12	17	29
April,	16	4	20	November,	14	8	22
May,	10	7	17	December,	17	7	24
June,	11	3	14	January,	9	10	19
July,	18	5	23	February,	13	9	22
August,	19	8	27				
September,	12	8	20	Total,	162	89	251

Occupation.

MALES.		FEMALES.	
Laborers, - - -	72	Housekeepers, - -	29
Mechanics, - -	48	Domestics, - -	45
Farmers, - - -	21	Tailoresses, - -	3
Children, - -	7	Children, - -	10
Seamen, - - -	9	Seamstresses, - -	2
Clerks, - -	5		
Total, - - -	162	Total, - -	89

Nativity.

Connecticut, - -	76	Scotland, - - -	8
Massachusetts, - -	16	England, - -	5
Virginia, - - -	9	Canada, - - -	4
New York, - -	8	Switzerland, - -	1
Maryland, - - -	3	France, - - -	1
Rhode Island, - -	2	Austria, - -	1
North Carolina, - -	2	Prussia, - - -	1
Maine, - -	1		
Michigan, - - -	1	Total, - -	251
Louisiana, -	1		
Ireland, - - -	92	Americans,	119
Germany, - -	19	Foreigners,	132

Habits.

Temperate, - -	217	Intemperate, - -	34

Disease or Cause of Death.

Consumption,	10	Metritis,	1
Cancer,	4	Hip Joint Disease,	1
Typhoid Fever,	4	Ulceration of Bowels,	1
Accidents,	3	Debility,	1
Asthenia,	2	Infant, (still-born,)	2
Puerperal Fever,	2		
Debility from Old Age,	2	Total,	36
Abscess of Lung,	1		
Congestion,	1	Males,	16
Disease of Heart,	1	Females,	20

Births.

Males,	5	Females,	9
		Total,	14

Whole number of weeks occupied by patients, was 2,549$\frac{2}{7}$. Whole number of weeks without including soldiers, 2,068$\frac{5}{7}$. Number of weeks occupied by soldiers, 480$\frac{1}{7}$. Number of weeks occupied by soldiers belonging to other states, 122$\frac{3}{7}$. Number of Connecticut soldiers admitted, 42. Number of soldiers admitted belonging to other states, 13. Number of seamen admitted, 7. Average duration of patients in the Hospital was ten weeks. Average cost per week for the support of each patient, $5.57. Average amount received per week from patients, without including soldiers, $1.68. Average amount received per week from the State appropriation without including soldiers, $1.03. Average amount received from the State for soldiers, $4.76. Received from the town of Hartford for the support of patients, $1,005.97, at the rate of $1.50 per week, to December 1st, 1867, after that date at the rate of $2.00 per week. Received of O. Utley Esq., Collector of Customs for this district, $180.67, for seamen at the rate of $5.00 per week. Patients were received from 105 different towns in the State.

DONATIONS.

Hartford Daily Post, Times and Courant. Rev. Wm. W. Niles, the Churchman. Mrs. Chas. J. Russ, Harper's Weekly, Frank Leslie. Rev. Chas. H. Bullard, American Messenger, Christian Banner, Child's Paper, the Child at Home. Mrs. Robert Watkinson, Side Board Pictures, Clothing, &c. Mrs. Charles Shepard, 2 dressing gowns, stockings, &c. Christ Church, Mother's and Infant's wardrobe complete, with trunk. Rev. J. J. McCook, turkey for Thanksgiving. Messrs. Seyms & Co., 2 large turkies for Christmas. David Clark Esq., one-half dozen quails, 50 oranges.

WM. P. CORRIN, *Steward.*

Admission of Patients to the Hartford Hospital.

ALL patients are admitted by a permit from one of the Executive Committee, who arrange the price per week according to the circumstances of the case, and accommodations required.

Those who are able to contribute toward their support, are received at an agreed rate.

The ordinary charge per week, is $5.00, which includes medical and surgical care, together with medicine and nursing.

Persons who are desirous of extra accommodations, are charged according to circumstances.

Persons who are destitute of friends and means, are provided for in various ways.

Those persons only who are carried directly from the place of accident, are admitted without a certificate from the Executive Committee.

No patients having syphilitic or contagious diseases are admitted into this Institution.

The following resolutions were passed by the Directors at their annual meeting, April 17th, 1865.

Resolved, That any person giving the sum of $175 for the purpose of establishing a free bed, shall have the privilege of one free bed in a ward of the Hospital, for one year.

Resolved, That any person giving at one time the sum of $3,000 for the purpose of free beds, shall have the privilege of a permanent free bed in a ward of the Hospital.

Resolved, That any person giving any specified sum for the purpose of free beds, shall have the privilege of one or more free beds in a ward of the Hospital, until the principal and simple interest of said sum shall be absorbed at the rate of $175 per annum.

Resolved, That persons occupying free beds shall be governed by the same rules and entitled to the same privileges that govern other patients admitted to the Hospital.

HOSPITAL REGULATIONS.

Patients shall not leave the Hospital grounds without permission.

No ardent spirits or other stimulating drinks shall be brought into the Hospital by the patients or their friends, nor shall patients be furnished with fruits, or any articles of food, without the knowledge and permission of the steward or medical attendant.

No patient shall enter the kitchen, cellar, or any of the domestics' apartments, under any pretence whatever, except by permission of the steward or matron.

No patient shall smoke tobacco in the house.

No male patient shall go into the women's apartments or wards, nor any female into those of the men.

There shall be no loud talking, nor any profane or vulgar language, nor any unnecessary noise or disturbance in the building, or on the grounds of the Hospital, nor shall any insulting or abusive language or conduct be allowed, either toward other patients or the attendants.

Spitting on the floor or other practices inconsistent with neatness of the building and furniture, must be avoided, and a proper regard must be observed for cleanliness in and around the Hospital.

Before lying down on their beds, patients must take off their boots and shoes, turn down the outer spread, and each patient must be responsible for the neatness of his bed when not occupied during the day.

All convalescents who are able, and who do not pay the regular charge of the Institution, shall assist generally in the police of their respective wards.

Patients will retire to their beds at or before nine o'clock, P. M., when the lights in the wards will be extinguished, except such as are absolutely necessary.

Visitors shall not be allowed within the wards except by permission from the steward, matron or medical attendant.

Visitors are not admitted on the Sabbath.

It shall be the duty of the steward to enjoin a strict observance of the above regulations, and he shall report to the Executive Committee any patient who shall continue to violate the above rules, and if occasion requires, may immediately discharge such patient from the Institution.

No officer or employee of this Institution shall accept any gift or bequest from any patient, except with the approbation of the Executive Committee.

Per order Executive Committee,

Hartford Hospital.

TREASURER'S ACCOUNT.

Dr. THE HARTFORD HOSPITAL *in account with* F. A. BROWN, *Treasurer.* Cr.

1867 May 1,	Paid amount due for loans at last statement,		$779.41
	Paid amount invested,		16,500.00
	Paid on orders drawn by the Executive Committee,		12,912.65
1868 March 1,	To balance in the Treasury not otherwise invested to new account,	$2,000.00	
“	To balance ordinary Hospital account to new account,	1,670.02	3,670.02
			$33,862.08

1868 March 1,	Rec'd from	Watkinson Fund,		$2,898.85	
	“	Adams	“	341.94	
	“	Beckwith	“	1,025.77	
	“	Tuttle,	“	60.00	
	“	Utley	“	66.50	
	“	Pond	“	120.00	
	“	Parsons	“	66.50	
	“	Williams	“	222.07	
	“	Smith,	“	80.00	
	“	Flower	“	175.00	
					$5,056.63
	“	State Appropriation,			2,119.24
	“	“ for Board of Soldiers,			2,305.72
	“	Board of Patients,			3,472.43
	“	Bequests and Donations,			20,908.06
					$33,862.08

HARTFORD, April 13th, 1868.

I have examined the above account, and find it correct.

JAMES B. HOSMER, *Auditor.*

THIRD ANNUAL REPORT

OF THE

SHEFFIELD SCIENTIFIC SCHOOL

OF

YALE COLLEGE:

INCLUDING

I. THE REPORT OF THE VISITORS ON THE PART OF THE STATE OF CONNECTICUT;
II. THE REPORT OF THE GOVERNING BOARD AND FACULTY OF THE SCHOOL;
III. A STATEMENT OF THE ESTABLISHED COURSES OF STUDY.
IV. A LIST OF THE OFFICERS AND STUDENTS.

1867-8.

NEW HAVEN.
PRINTED BY TUTTLE, MOREHOUSE & TAYLOR.
1868.

State Board of Visitors,

CONSTITUTING, WITH THE SECRETARY OF THE SCHOOL, THE BOARD FOR THE APPOINTMENT OF STATE STUDENTS.

May 1867 to May 1868.

GOVERNOR,

His Exc. JAMES E. ENGLISH, New Haven.

LIEUT. GOVERNOR,

His Honor EPHRAIM H. HYDE, Stafford.

STATE SENATORS,

Hon. GEORGE BEACH, Hartford.
Hon. MILES T. GRANGER, North Canaan.
Hon. AMOS J. GALLUP, Sterling.

SECRETARY OF THE STATE BOARD OF EDUCATION,

Rev. BIRDSEY G. NORTHROP, New Haven.

May 1868 to May 1869.

GOVERNOR,

His Exc. JAMES E. ENGLISH, New Haven.

LIEUT. GOVERNOR,

His Honor EPRHAIM H. HYDE, Stafford.

STATE SENATORS,

Hon. EDWIN H. BUGBEE, Dayville.
Hon. ISAAC T. ROGERS, Milford.
Hon. ALBERT AUSTIN, Suffield.

SECRETARY OF THE STATE BOARD OF EDUCATION,

Rev. BIRDSEY G. NORTHROP, New Haven.

SECRETARY OF THE SHEFFIELD SCIENTIFIC SCHOOL,

Prof. DANIEL C. GILMAN, New Haven.

Corporation of Yale College.

PRESIDENT,

REV. THEODORE D. WOOLSEY, D.D., LL.D.

FELLOWS,

HIS EXC. JAMES E. ENGLISH, NEW HAVEN.
HIS HONOR EPHRAIM H. HYDE, STAFFORD.
REV. JOSEPH ELDRIDGE, D.D., NORFOLK.
REV. GEORGE J. TILLOTSON, PUTNAM.
REV. EDWIN R. GILBERT, WALLINGFORD.
REV. JOEL H. LINSLEY, D.D., GREENWICH.*
REV. DAVID S. BRAINERD, LYME.
REV. ELISHA C. JONES, SOUTHINGTON.
REV. LEONARD BACON, D.D., NEW HAVEN.
REV. HIRAM P. ARMS, D.D., NORWICH TOWN.
REV. MYRON N. MORRIS, WEST HARTFORD.
REV. SAMUEL G. WILLARD, WILLIMANTIC.
HON. EDWIN H. BUGBEE, DAYVILLE.
HON. ISAAC T. ROGERS, MILFORD.
HON. ALBERT AUSTIN, SUFFIELD.
HON. JAMES GALLAGHER, NEW HAVEN.
HON. WILLIAM C. STREET, NORWALK.
HON. CORNELIUS BRAINARD, HIGGANUM.

SECRETARY,

WYLLYS WARNER, M. A.

TREASURER,

HENRY C. KINGSLEY, M. A.

TREASURER'S ASSISTANT.

LUCIUS W. FITCH, M. A.

---

* Deceased.

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REPORT OF THE BOARD OF VISITORS.

To the General Assembly of the State of Connecticut:

THE undersigned, in behalf of and by vote of the State Board of Visitors of the Sheffield Scientific School, would respectfully report that the Board have attended to the duties required of them, and have paid two regular visits to the School during the year; one, with a view to examine the practical working of the institution under its present management; the other, to select such candidates as might present themselves as applicants for the several scholarships which are open to the students from the State.

The Board were much pleased with the management of the School, and are satisfied that the instruction is conferring important advantages upon the State.

The course of instruction is comprehensive and liberal, and includes all the branches essential to a good practical education; especially is this true in regard to Agriculture and the Mechanic Arts, and other branches of Science in which our people are largely interested.

It is this feature of the School which strongly commends it to public favor and confidence, and which should enlist a still greater and more general interest in its behalf.

With its substantial endowment and able corps of instructors in the various branches of Science, practical as well as theoretical, it holds out advantages which cannot be too highly prized by the public, and it is to be regretted that a larger number of our young men do not avail themselves of the instruction it affords.

The Board deem it unnecessary to make a detailed report of the condition and management of the School, since a statement will be printed herewith, which was drawn up and presented to them by the Governing Board and Faculty of the Institution, containing all the information desirable to report.

We cheerfully commend the School to the continued confidence and support of the Legislature, and to the friends of Scientific education throughout the State.

In behalf of the State Board of Visitors,

JAMES E. ENGLISH,
Chairman.

New Haven, April 16, 1868.

STATEMENT

RESPECTING THE PROGRESS OF

THE SHEFFIELD SCIENTIFIC SCHOOL

OF YALE COLLEGE,

Presented to the State Board of Visitors,

At their Annual Meeting, March, 1868,

BY THE

GOVERNING BOARD AND FACULTY OF THE INSTITUTION.

Governing Board of the Sheffield Scientific School.

PRESIDENT WOOLSEY.

PROFESSORS DANA, NORTON, LYMAN, SILLIMAN, WHITNEY, BRUSH, GILMAN, JOHNSON, BREWER, ROCKWELL, EATON, MARSH, AND VERRILL.

Historical Note.

The Department of Philosophy and the Arts, to which the Scientific School pertains, was instituted in Yale College, at the Commencement of 1846. In 1860, Sheffield Hall, the gift of Mr. JOSEPH E. SHEFFIELD, of New Haven, was presented to the School, and immediately occupied. He also gave a fund of Fifty Thousand Dollars as the partial endowment of three professorships. In 1866, the Hall was enlarged and refitted a second time at the expense of the original benefactor.

The Congressional appropriation, made in 1862, for the establishment of a Scientific College, was directed to this institution by the General Assembly of 1863.

ANNUAL STATEMENT FOR 1867--8.

I. Aim and Object of this Department of Yale College.

In the first of this series of Annual Statements, made two years ago, we presented an account of the history of the School, of the successive steps by which it had grown to its present extent and assumed its present constitution. In the second, published last year, the external apparatus of the School, its building, instruments, and collections, were described. This time it is deemed appropriate to put forth a more distinct statement than has yet been given of the aim and object of the School—of the part which it is intended to fill in the general scheme of instruction of the community.

Such a statement is the more called for, inasmuch as the position of a school like ours is in some respects peculiar. On the one hand, it is a school of special professional training, and aims to fit men to exercise the callings of engineer, chemist, naturalist, and so on—being so far analogous in its office with the schools of law, medicine, and theology: while, on the other hand, it imposes obligatory courses of a more general character, requiring of its graduates proficiency in other than their professional studies — thus being in part analogous with the College proper, the so-called Academic department. What, it may be inquired, accounts for and justifies, in our intent, this combination? Moreover, our scheme of study is especially marked by the omission of certain branches, and the substitution for them of certain others, respecting the relation and comparative value of which a somewhat lively controversy is now going on in all enlightened countries; and our views and attitude toward this controversy are liable to be misapprehended if not explained by us.

In order that they may be understood, it is necessary that we enter into a brief discussion of the ground and objects of education and discipline. We shall have in view only intellectual discipline—not, of course, as overlooking the importance of moral and religious discipline; but because these must be gained more from that by which the School is surrounded than from what it is: it is essentially a place for intellectual training, and must be judged by its success as such.

1. *The ends and means of education.*

The object of all education is to increase our capacity of happiness and usefulness, to enable us the better to enjoy our own lives and help others to enjoy theirs. In calling forth and training the powers of the individual, it has this double end distinctly in view. Very few are so situated as not to be required to make their lives valuable to others, that others may help them to live; and the few who are not thus compelled are led to it by an enlightened self-interest, since otherwise they miss what is the noblest and highest pleasure of all—that of doing good to those about them. Every one has a part to play, a work to perform, in the great task of human improvement; and he must be duly fitted for it.

That is a low idea of education which limits it to any particular period of life. Even in the humblest occupation, acquisition of skill and experience should be ever enabling a man to rise to higher station and to do more valuable work. He is either very unfortunate, or else worthy of blame on account of wasted opportunity, whose life, even to its end, is not constantly becoming of greater worth, to himself and others, by growth of knowledge and of power to accomplish. Yet youth is eminently the season of acquisition and preparation. Every one's energies must at some time begin to be mainly absorbed in applying what he has acquired, in exercising what he has prepared for. The time comes sooner or later, according to circumstances. There are those who have to begin the hard work of life as soon as they have learned to walk and to talk; others are pressed into the ranks at every age. Nor must active service be begun too late, lest the capacity for it be lost; a life of which too much is spent in preparation is apt to lead to nothing.

If education be taken in this narrow sense, of preparation for the active work of life and for what comes along with this, then that is evidently the best and most successful education which, in any given case, most thoroughly fits the man for his special work, and, at the same time, plants him upon the broadest and deepest foundation for improvement both within and without his own department;

which least narrows his views and capacities; which makes him the ablest workman, and, along with that, the fullest man. Some occupations, of course, are in their nature more narrowing than others, and that is the most noble and satisfying which demands the widest basis of preparation, and calls into exercise the highest and most varied capacities. But in our community, more than elsewhere, no one is expected to limit himself to preparation for his own craft, since our idea of equality is that each person be encouraged to rise as high above the station in which his birth and circumstances have placed him as his powers and opportunities allow: nay, more; no one *may* thus limit himself, since each is also the citizen of a free state, having powers and responsibilities which he cannot properly sustain without education, and to fit him for which he cannot possibly have more than enough education.

Education is constantly changing its ground and methods, by reason both of the increase of knowledge, and of the multiplication of vocations. It must include within its scope every existing department of human knowledge, and every valuable mode of its application. The Greek was trained in all the sciences that the genius of his countrymen had created or developed—in mathematics, philosophy, rhetoric, and so on: classical and linguistic studies were excluded from his curriculum, because he recognized no tongue but his own as being other than barbarian. The Roman, in addition, had the Greek language and literature as a means of training. At the revival of learning in Europe, the two classical tongues and the works produced in them were the fountains of instruction and models of imitation, and their study assumed a prominence in the scheme of education which has come down by inheritance even to our own day. Meanwhile, however, under their incitement and guidance, the mental activity of modern Europe and its colonies has accumulated abundant treasures of knowledge in every department, in part comparable with, in part greatly overshadowing, those bequeathed to us from antiquity. In literature, in art, in science, in philosophy, in philology, in history, that which is Greek and Roman now forms only a part of the store from which we draw, and on which our education must be founded. None of all this is valuable to the exclusion of the rest. No theory of education can possibly be sound which does not recognize the absolute worth of all human knowledge, or which contemns "facts" of any kind, philological, historical, or scientific. Every branch must have its own followers, so trained that they shall be able to extend and perfect it, both in itself and in its relations to other branches. That man is a specialist whose training unfits him duly to appreciate any part of that which is known. But every one of us is and must be a specialist, for the field of knowledge has become much too vast to be occupied, or even to be overlooked and judged, by any individual. It was long since said that he only is wise who knows that he knows nothing—and the saying is becoming truer every day, not with reference only to what man would fain know, but also to what he already knows. Each man has to turn his back deliberately on much that he would fain possess, that he may prepare himself for what he has to do. The various branches of knowledge have a comparative value, which varies with the ground and point of view occupied by each learner. There comes a time when we must cease laying a general foundation and build up our own building; and earlier or later, according to our different circumstances. A certain common substructure lies beneath all the forms of special training, and the broader this is made, in any class or country, the higher is the standard of education there. Our mother-tongue is the first thing we learn—a most important means both of training and enlightenment, and the indispensable preliminary to all that is to follow. Then come the alphabet, the multiplication-table, and the writing-book: no one questions the universal necessity of the "three *r*'s," as they are familiarly styled ("reading, 'riting and 'rithmetic"). But from this point begins the difference of opinion and dispute as to what must be added, and in what proportion; the branches of desirable knowledge begin to jostle and crowd out one another. Into the dispute we do not wish or need to enter here: practically, it is irreconcilable; there will always be room to maintain that something which *I* know and value constitutes a more essential part of a true education than what another recommends for the same reason. It is, however, evident that the greater and more varied the mass of human knowledge and the modes of human activity, the earlier must the diversity of educational training begin: it is not possible to raise the standard of education at a rate corresponding to the growth of its means and its ends.

Formerly only members of the "learned professions," and gentlemen who could afford to train themselves after their pattern, were regarded as needing to be "educated;" and a little of the old feeling remains, though put out of date by the different aspect of affairs in our time. Other occupations used to be mere trades, the preparation for which consisted in the acquisition of a certain amount of mental and manual dexterity, handed down in guilds and the like, and communicated by private instruction. Now, nearly all the arts of life are raised to a vastly higher plane; the causes and modes of action which they involve are understood; underneath each lies a science, whose comprehension is necessary to their highest and most successful pursuit; a science, too, whose establishment has perhaps required as much learning and insight, as much faithful labor in investigation and logical acuteness of deduction, as much accumulation of wisdom, as high gifts of intellect, as any known branch of human knowledge; whose acquisition costs as thorough preparation, as long study, and as distinguished capacity; and which offers as keen satisfaction to the curious intellect, and has as wide and direct a bearing upon human happiness. All is here included that can give dignity to a calling and to the preparation for it. The scientific man, as he is often called—for example, the engineer, the chemist, the naturalist—is by his occupation challenged to not less ability and disinterestedness, and promised not less usefulness, than the lawyer or physician; his due training is as real a part of the higher education, all that fits him for his work is as truly disciplinary, as anything else in the whole scheme of study.

It is not well possible to lay too much stress upon discipline; but it is comparatively easy to misunderstand what is meant by that word. Anything is disciplinary which prepares the mind for the worthy exercise of its powers, which fits it to receive and utilize truth. There is a too current disposition now-a-days to divorce discipline from acquisition of knowledge, to contemn the useful as ignoble. This is a natural reaction against the opposite tendency, to regard no knowledge as worth acquiring of which the utility is not immediate and obvious. Either error is equally detrimental; and either, when nakedly presented, is sure to be rejected by any enlightened mind; but it is not so easy to avoid some admixture of the one or the other. It might be difficult to say whether an education of bare discipline, always preparing for something to come and never reaching it, or an education of pure cram, thrusting in information that is immediately assimilable and nothing else, would turn out the most of a failure: the result would depend on the force of mind and natural disposition of the individuals subjected to the training: but it is quite as likely that the one scholar would be turned into a mere machine, with capacity and desire for knowledge extinguished, as that the other's powers of combining and reasoning would be destroyed by overloading. As a matter of fact, every one is compelled to learn much which he does not at the time appreciate; which, having only a prospective value, is disciplinary. Thus, what apparently more unfruitful and uninteresting "fact" can there be than that the figure of a pair of straddling legs, with a bar across them (A), is to be called *a*? Many a child has to be flogged into acquiring it. What more barren scheme of "facts" than the multiplication table, or a list of Latin words, or a Greek declension? but by and by, after we have learned them, we come to find their value. And throughout the whole of education, we are constantly getting, under the guidance of others or on faith, what is to be of use to us farther on—and this is all that "discipline" means. The farther on may be a great way off, but it must be somewhere; and at least a good part of it must be within sight or easy reach. There is discipline in the acquisition of all knowledge, because the mere effect of acquirement helps to acquire farther; and also because all knowledge is in itself valuable, as connected with and leading to other knowledge, as enriching and expanding the mind, giving it the taste to acquire and the power to retain. But its worth for discipline lies vastly more in the latter mode of action on the mind than in the former. Nothing is more really disciplinary, in the highest sense, than the gaining of valuable knowledge, along with the comprehension of its value, and the understanding how to use it. Nothing thus given is mere fact or information, nor is the process of so giving it a cram. This is the material on which the mind must work, in order to test and increase its powers, and without which what it may do is only mock work, which exhausts while it exercises. The idea of spending the season of "education" wholly or mainly in a sort of mental gymnastics, of laying out a scheme of preparation for the active work of life which does not include as an essential part the storing of the mind with a variety of useful information, is as erroneous as anything can be. It implies that the rest of life is to be devoted to the acquisition of knowledge, under the guidance of competent instructors, who will see to it that the powers they have trained are directed to worthy objects. It tends directly to make and keep men specialists, turned out as they are with minds imperfectly and desultorily furnished, to give themselves up to work in one direction. He who is to know and love what lies aside from his own narrow track must have learned so much that he has tasted the pleasure of knowing in many departments, that he has a nucleus of acquisitions in more than one kind to which new acquisitions may attach themselves, that he can overlook to some extent the field of knowledge, and see what part is more valuable than others, in itself or for him. It would be, no doubt (to adopt a current comparison), a good thing in itself to have gained by steady and consistent drill such a power of concentration as to be able to keep the eye and the thought fixed for half an hour upon the point of a needle without flinching; but one might spend upon this accomplishment so much of the force of his education as to acquire a morbid taste for it, and to be ready to pass his life gazing at needle-points, not knowing that there is anything else better worth doing. When we learn to write, we begin with making pot-hooks and hangers; this is legitimately disciplinary, training the hand for the approaching formation and combination of letters; it would be, indeed, very much grander to start with such a thorough drilling of the eye and hand that Egyptian hieroglyphics, Chinese monograms, and Hebrew and Sanskrit ciphers should come as easily and naturally as English writing; this we might call the "high disciplinary" method; but if the result was (as it would be) that the time when we should have been learning to write had been lost in preliminary preparation for it, and that when writing was a practical necessity to us we had not the art at command, we should have to regard our training as ill directed, and the time spent upon it as thrown away. The ends of education must not be lost sight of in the means; those ends are practical, and must be pursued by means likely to result in their attainment. What is the best discipline for one is not the best for another, even though both may aim at an equal degree of general culture, if their disposition is different, or if they are to follow different walks in life. Each method must be judged by the fruit it yields; that is wasted labor from which in the end no appreciable advantage is derived; the mental effort spent in it might better have been given to something else.

There are those who hold that classical studies are what we have called above "high-disciplinary." This is, however, a wholly erroneous impression—although, perhaps, not illegitimately derived from the claims sometimes put forth in behalf of these studies. Greek and Latin are full of the most direct and far-reaching connections with the rest of our knowledge. Our religion, polity, law, and art come in no small measure from Greece and Rome; our science had its beginning there; the roots of our history are to be traced thither; our literature is modeled on Greek and Roman prototypes; our very language is in great part derived from those sources. The Greeks and Romans, in short, were the originators of our modern culture, in all its departments. They were the most gifted nations of antiquity, our exemplars in nearly every mode of intellectual activity. Their languages are in many respects the finest known instruments of human thought. What is of not less consequence to us, with the investigation of Greek and Roman language and literature has been bound up for a long time past the advance of knowledge and culture; their students have been the intellectual class, a great and powerful guild, with such a past behind it, with such associations clustering about it, wielding such power and enjoying such prestige, that every one must desire admission to it. Classical studies put us in communication with the best thought of both ancient and modern times; they give a kind and degree of mental culture which has been attainable by no other means, and which long custom, as well as its intrinsic character, leads the community to estimate at, to say the least, its full worth.

It is true that, as already noticed, the prominence of the classics as a means of education is upon the wane—not by their loss of absolute value, but by the uprise of other means to the same end, possessing a not less urgent and conspicuous importance; partly, also, by the transfusion of their valuable content into other and modern forms, so that their influence is obtainable indirectly. An immeasurable amount of enlightenment and inspiration is still to be drawn from them, as well as a vast deal of work to be done upon them for the benefit of the race; their knowledge will be the essential pre-requisite to all original and profound investigation of the history of man and human culture; they will always form one of the most important branches of study and means of discipline; they will train the literary taste, the linguistic sense, the faculty of interpretation and criticism, the power to think one's self into the thoughts of other men and other times, the comprehension of humanity and its work. They will demand not less attention in amount than they have hitherto won—although there will be large classes of students whose training may and must be gained without them, by the aid of the abundant fruits of culture which have now been stored up outside of them; and although, on the other hand, he who is versed in them alone can no longer make the same pretension to discipline as formerly. There was a time when to be merely a good Latin and Greek scholar was to be well educated; now, such a one is only a specialist, and may be a narrow-minded pedant, as really deficient in due discipline as if he knew nothing but mathematics, or chemistry, or zoölogy.

The objection is often brought against classical study that those who devote to it so large a proportion of the time given to training never carry it, after all, beyond the stage of preliminary discipline, do not begin to derive fruit and enjoyment from it, and drop it abruptly when the work of life is begun, hardly if at all conscious of benefit obtained. Much more is apt to be made of this objection than it is really worth; for, on the one hand, no one is capable of measuring the good that a study does him in exercising the powers of his mind and increasing its range and capacity; and, on the other hand, the higher benefits of education are not within the reach of every one; a host of minds are only limitedly receptive of general culture; are capable, perhaps, of becoming fair specialists in some line which engages all their energies; nothing more. All education is to this extent experimental and liable to failure. The liability does, however, constitute a powerful and valid argument against limiting education to one unvarying pattern, since many a mind which is repelled and stagnated by one set of studies, may be incited to independent and healthy action by another.

We have entered into so much of detail respecting classical study because the scientific courses are mainly peculiar, and exposed to distrust on the part of many in the community, in virtue of the inferior place which they assign to such study, and because they seem to some to deny hereby its value, and cast reproach upon it. This is not at all our intent: we hold that every scientist is the better for all the classical training he can get, even for vastly more than is given in the ordinary college course. Only we also hold that it does not outweigh in importance everything else, and constitute to every one the *summum bonum* of mental training.

These, then, are the fundamental principles on which reposes our opinion of the value of the Scientific School, as a worthy and dignified portion of the general system of education, as a disciplinary institution as well as a professional:—That all knowledge is valuable for discipline, each kind of knowledge giving its own kind of training, and both abundance and variety of positive knowledge being indispensable to the acquirement of that sound judgment which makes the practical wisdom of life, as well as of that love of knowledge for its own sake which conducts to some of the highest and keenest enjoyment that life furnishes; that but a fragment of what is known lies within the reach of any person, and that each, in view of his own needs and opportunities, must choose the part which will be worth most to him; that a system of general education must aim to effect a due compromise, not neglecting the qualification of the pupil for his speciality, but also seeing to it that his mind is expanded, made receptive of truth from every source, and prepared for its utilization; and that there is no other criterion of the comparative dignity and worth of different branches of study than their utility in one or both of these directions.

2. *How the ends of education are here sought to be attained.*

In what ways and by what means we are endeavoring to accomplish what we have undertaken, and to bear our part in the general work of education, may be easily and briefly told.

First, in the so-called regular courses of the school, we give our students a thorough three years' training in certain connected and graded branches of study. These courses are prevailingly mathematical and scientific, being intended to meet the wants of that already large and now rapidly increasing class of pupils whose disposition and aims in life make such a training more valuable to them than one in which the literary and historical element predominates. They have in view the two ends of education, as above laid down; being in part such as directly prepare for the foreseen duties of actual life, in part such as equip the man in general, tending to fit him for sustaining worthily any responsibilities which the future may put upon him. No one is allowed to confine himself to a specialty; a series of general studies, both scientific and literary, runs through the course, and is made obligatory upon all. Linguistic discipline is not ignored; instruction in the French and German languages is made the vehicle of it, and answers to some extent the purposes sought to be attained on a larger scale by the study of Latin and Greek in other modes of education. In the English language also is given such instruction—rhetorical, critical, and historical—as the time permits. In drawing, the attempt is made to give to the eye and hand something of that training which shall enable the latter to represent what the former sees, or what the mind conceives.

The first year is entirely occupied with studies of this more general character. For the other two years, aside from the general obligatory studies, the student is allowed to make his choice between several partially distinct and parallel courses, according to their bearing on his future profession, or upon any other ground determining the preferences of himself and his friends. Their nature, and the branches pursued in each, are fully set forth in the programme given in another part of this Report. One of them, the "Select Course," is of a less special character than the rest, and is intended to meet the wants both of those who desire a training of this general kind, but without having in view any of the professions toward which the other courses more directly conduct; and also, especially, of those who have the leisure and disposition to continue the work of preparation longer before entering at all upon studies having an immediately professional outlook. But the essentially disciplinary nature of the training, alike in all the courses, is attested by the fact that the degree given at graduation is that of Bachelor of Philosophy, the same to all: it vouches that its possessor has gone through a course of instruction, of a somewhat different character from that given in the ordinary collegiate institutions, fitting him to enter with advantage, here or elsewhere, upon higher and yet more special studies, which shall make of him a competent civil engineer, chemist, physician, and so on.

Every exertion is of course used to make the instruction given in the School thorough, to give it a truly scientific character, by carrying each study back to the fundamental principles on which it reposes. Nor do we mean to be content with a less faithful attention to the subjects pursued, nor with a lower standard of individual scholarship, than is required in the Academical department of the College. Our rules respecting attendance, efficient study, and the maintenance of fair standing as a scholar, are strict and strictly enforced. We allow no one to continue member of a class by whose studies he shows himself incapable of profiting, or which he tends to hold back by want of ability or attention.

In the second place, we also offer opportunity for more advanced professional study. In connection with the other, or Academic, branch of the Department of Philosophy and the Arts, the Scientific branch affords facilities for scientific study in various directions up to any desired point of acquisition. On the one hand, those who have gone through the preliminary training and taken the Baccalaureate degree, in either branch, may study here for certain higher degrees, general or special; on the other hand, those whose previous education fits them to follow a free course of study in any of the branches of science represented in the school, for any length of time, without regard to a degree, find here the instruction they need. This was, in fact, according to the original plan of the school, its principal or sole activity: but experience soon showed that but a few of those who presented themselves could bear being limited to special courses; that their equipment by the preparatory schools was insufficient; and that, if the standard of scientific education was to be raised, and men graduated who should be more than mere specialists, it was necessary for the School to undertake a larger share of their training.

Something, we believe, has been already accomplished in this direction, but much more yet remains to be done. Considering the place which Yale College occupies among the educational institutions of the country, and the many advantages for the scholar which are gathered or gathering at this long-established seat of learning, it ought to be, and it is, our ambition to make the Sheffield Scientific School stand in the front rank among the schools of science which are now springing up in such numbers all over our country—to make it turn out the best educated men of science, in virtue both of the amount and quality of the instruction given in it, and of the studies required as preparation for it. We fully intend to rise to such a position, as rapidly as our means shall allow, as rapidly as we shall be enabled to rise by the public opinion and support. At present, we are carrying on the institution upon a larger scale than our funds warrant, and can only plan improvements which we are powerless to execute. The time of three years, to which our courses are now adjusted, is too short for what we have undertaken to introduce into them: we greatly need another year, in order to do justice to our scholars. There is no reason why the well-educated scientific man should expect to prepare himself for his work in less time than the well-educated member of any other of the learned professions. While we are compelled to do so much of the work of preparatory training which, in a more thoroughly organized and graded system of general education, might and should be done in the lower schools, we need the added year, if only for fuller attention to the wider disciplinary branches. In respect to some of these, we stand at a disadvantage. It is thus with regard to drawing: no small part of what we have to teach should be learned, as it is everywhere in Europe, in the earlier stages of education. It is thus with regard to the languages. Not a little of the benefit which ought to be derived from the French and German, and from their literatures, is now lost, because we cannot assume that those who come to us will have been able to obtain in the lower schools good instruction in those tongues, and because we must therefore commence their study from the very beginning. It is chiefly in view of this fact that we have lately added a certain amount of Latin to the prospective requirements for admission, from the autumn of 1869 onward. Apart from the great and undeniable value of a knowledge of the Latin for its own sake to every educated man in every department, and its absolute indispensability, even, to the student of many branches of science, there is no other way in which the grammatical and philological practice needed to enable one to take up the modern languages successfully and acquire them rapidly can be so easily and surely gained as by the study of this tongue, for which facilities are found in every good school, and which forms a natural and customary part of every preparatory course. It has, indeed, been found by experience that five sixths of the students hitherto received into the School have had as much instruction in Latin as our plan contemplates; and the advantage of it has been distinctly felt.

One serious difficulty against which we have to contend—a difficulty growing in part out of the want of due adjustment between our institution and the preparatory schools, in part out of other causes—is the want of sufficient preparation on the part of those who offer themselves for admission. Every year, many candidates are wholly rejected, while others are brought in only after a season of probation and extra study. It seems difficult to make young men, parents, and teachers understand that the entrance examination is a serious and penetrating one, not only in the mathematical, but also in the more general English branches. Candidates and their friends do not realize how much of the satisfaction and profit of the course is lost when one comes so scantily fitted and insufficiently trained that he just scrapes in, or enters under conditions, with examinations to be made up and passed a second time, thus keeping up the scraping process for an indefinite period, perhaps a large part of the whole of his stay in the School. We hope for a marked improvement in this respect as our plan comes to be better comprehended, and as such institutions as ours come to be distinctly calculated for in the preparatory schools.

II. The need of an increased Endowment.

In consequence of the bestowal upon this institution of the income derived from the national land-grant, the Governing Board were led at once to enlarge the courses of instruction previously maintained, and to enlist the services of additional professors, in order that the "Connecticut College of Agriculture and the Mechanic Arts" might sustain a character worthy of the reputation of the State in matters of education, and corresponding in some degree at least with the superior advantages long enjoyed in the Academic Department of Yale College. This enlargement of the scope of the Sheffield Scientific School has been justified by the experience of the past two years. Students have come to us from every portion of the country; and not only so, but gentlemen concerned in the establishment of kindred institutions have visited New Haven from almost every State which has received the national grant, in order to see the actual operations of our school and gather information from our experience. Such visitors have always been welcomed, and from many of them we expect in our turn to derive important assistance and counsel. We have also been gratified to see abundant indications that the school is growing in the good will of the people of Connecticut. The newspapers of the State have spoken favorably of our work, and we have enrolled among our scholars more from Connecticut than the number for which the State made provision. Our collections and museums are also growing, and the instructors of the school are more and more called upon to coöperate in local educational and scientific labors.

While we are thus encouraged by the evidences of increasing influence, we are disheartened by the fact that our funds are still so inadequate as to prevent us from doing all which we should like to do for the promotion of science and scientific education. The portion of the national grant which fell to the share of Connecticut was inconsiderable compared with that which was received by New York, Pennsylvania, Massachusetts, and other large States. The only other fund on which we can depend is made up from the gifts of a few individuals, and is less than sixty-thousand dollars. Tuition fees add indeed to our resources, but not so much as might be expected from the number of students whose names appear upon the roll, because the fees of so many are remitted. We feel in consequence that our Institution, for the work it proposes to perform, and for the character which it aims at maintaining, is still but imperfectly endowed; and we are persuaded that if men of property and of liberality would but look into our circumstances with close attention, they would discover inviting opportunities for the employment of their wealth. Impressed with these considerations, the Governing Board determined early last autumn to make an effort to increase the endowment of the Scientific School. They invited a number of the citizens of New Haven to come together and listen to a statement of the wants of the School. Governor English, Chairman of the Board of Visitors, who has shown the same appreciative interest in the School which was manifested by his predecessors, Governor Buckingham and Governor Hawley, indicated his confidence in our enterprise by an early subscription of one thousand dollars; Mr. Joseph Sampson, of New York, a summer resident in New Haven, paid a like amount; Mr. Wells Southworth increased a former subscription which he had made so that it amounted also to one thousand dollars; Messrs. William & E. T. Fitch subscribed as a firm the sum of five hundred dollars; and Hon. Morris Tyler, late Mayor of the city, subscribed three hundred dollars. Several other gentlemen likewise promised their aid, but have not as yet signified the amount they will give. We are not without hopes that, when the business of the country is more prosperous, our friends will liberally sustain an institution in which they avow a decided interest.

At the request of the Governing Board, Mr. Luke E. Wood, of Clinton, has also called upon a few persons resident in other parts of the State and has laid before them a statement of our hopes and plans. As a brief explanation of our wants, the following paper, signed by the various members of the Governing Board, has been printed, and sent to a few gentlemen.

CIRCULAR.

"The undersigned, officers in the Sheffield Scientific School of Yale College, regarding ourselves as the representatives or trustees of the friends of scientific education, in the maintenance of an important public interest, feel compelled to lay before a few of those for whom we act a simple statement of the condition and prospects of this rapidly growing institution.

"It is well known that we are maintaining at New Haven, under all the advantages which come from a connection with Yale College, a modern school of theoretical and practical Science, in which young men may secure for themselves not only thorough mental discipline, but also an acquaintance with such branches of useful knowledge as Chemistry, Civil Engineering, Mining, Metallurgy, Mechanics, Agriculture, and other departments of natural and physical Science.

"In this undertaking we have been dependent, like all other higher establishments of learning, not only in this country, but abroad, on the liberality of public and private benefactors. We have received generous aid, far beyond our expectations, and we point with pleasure to the results which are due, in no small degree, to this timely assistance. A spacious and convenient edifice has been provided for the School, and equipped with valuable collections of apparatus, instruments, books, diagrams, models, and specimens; a corps of not less than twelve professors devote themselves to this department of the College; hundreds of young men have already been fitted here for the various callings of life; and one hundred and twenty scholars are this year receiving our instructions. We have also endeavored to be of service to the public at large by lectures gratuitously given to mechanics and farmers, and to general audiences in different parts of the State. It would not be modest in us to say more; but so much as this seemed necessary to exhibit the foundations which have here been laid.

"We cannot continue this work, however, on its present scale, without assistance from the friends of scientific education. During the past two years our income has fallen considerably short of meeting our expenses, and we have been forced to draw upon a small accumulation (now exhausted) which peculiar circumstances in a former year had placed at our command. More than one of our professors are giving their services to the school gratuitously; others are on half-pay: and not one receives from the school a salary at all adequate to the maintenance of his family. Several of our number have declined far more lucrative posts elsewhere, from a desire to help in building up this new department of Yale College. But this state of things cannot and ought not to continue long. We shall be obliged to contract our plans, and lessen our useful activity, unless we are assisted. We do not ask for help on personal considerations, but we do appeal with confidence in behalf of the interests of education, and in behalf of a young and prosperous institution, to those gentlemen of intelligence and wealth by whose encouraging words we have repeatedly been cheered, and whose opportunities have enabled them to see the importance of such a school as is committed to our care.

"There are several departments of the school, not yet endowed, to which large sums might be directed with a certainty of benefiting for generations to come the education of our countrymen, and the development of the national resources. We are hopeful that new features will thus from time to time be added to this institution; but now we ask especially for contributions applicable to all the current necessities of the establishment—the income only to be expended, and the principal to remain forever as 'THE GENERAL FUND OF THE SCIENTIFIC SCHOOL.'

"As the nucleus of this fund, we have already received—in addition to the specific gifts of Mr. Sheffield and others—the sum of Ten Thousand Dollars. We need at least One Hundred Thousand Dollars. We believe that among the capitalists of the country there are many who will take pleasure in giving their coöperation to sustain, on a scale corresponding with its importance, a school on which so much depends."

In justification of this appeal, repeated now with even more earnestness than when it was originally made, it may be well to show why it is that a well ordered school of science is so costly; especially as the erroneous and injurious rumor has gone abroad, and has made an impression on some of our best friends, that the scientific departments of Yale College are sufficiently endowed.

Although the growth of this institution, since 1860, has been rapid, the demands upon it have increased with still greater rapidity. Prior to the date just named, there were but two classes of students, those engaged in the chemical laboratory and those who were studying civil engineering. Now, in accordance with public demands, as our programmes of study indicate, special professional or technical education is provided for chemists, metallurgists, civil, mining, and mechanical engineers, agriculturalists, geologists, naturalists; and we are also called upon to provide a general disciplinary course of study, closely corresponding, as we have already said, to the academic course; and likewise higher courses of instruction suited to the wants of those who have already taken their first degree and are candidates for a second. Thus the students of this department are divided into not less than seventeen distinct groups, or squads, each having its own prescribed curriculum; and there are also several independent students pursuing their special researches. All this involves of necessity a large corps of teachers, every one of whom aims to be proficient in certain chosen branches of study. It cannot be expected that a professor of mining should be a teacher of botany, or that a professor of agriculture should take charge of the instruction in civil engineering. Every teacher in the school has abundant occupation for his time and strength in endeavoring to keep up with the progress of science in his department, and in imparting to his classes the instruction they require. We are only kept back by the lack of a sufficient number of teachers, from making the regular courses extend through a period of four years.

The entire endowment available for the current expenses of the Scientific School yields less than fourteen thousand dollars, including the income of the congressional grant and of the library fund; to this may be added the income received from tuition—money which amounted last year to eight thousand dollars; and out of the aggregate are to be taken the payments for salaries, repairs, fuel, insurance, library-books, and the innumerable miscellaneous expenses which are indispensable. It is hardly necessary to add that no pecuniary assistance is received from the general funds of Yale College, though our students are freely admitted to the academic lectures. From this brief statement, it must be evident, we think, that our resources are far from being ample.

When we hear of the funds which are at the command of kindred establishments, especially in foreign countries; when we consider the rapid advances which are making in every department of scientific research and of practical skill; when we think of the fine collections of books, apparatus, models, and specimens which ampler resources would immediately provide for us; when we consider how many useful branches of knowledge are now wholly omitted or are inadequately represented in our present curriculum, we earnestly hope, for the good of science and of the country, that the day is not distant when our means will be largely increased. We are persuaded, that if men of wealth would but look into the mode in which the funds of the college are employed, would consider the care with which they are controled, and the good which results from the income they yield, it would be clear that permanent and substantial good is secured for the country by every endowment which this University receives. It has been truly said elsewhere that "the treasury of Yale College can show dollar for dollar of every gift entrusted to it."

III. Additions to the Scientific Collections.

1. ZOOLOGY.

Many important additions have been made to the Zoölogical collection during the past year, both by donations and exchanges. In the early part of the year, Mr. F. H. Bradley made some valuable collections at Zorritos and Paita, Peru, in continuation of his explorations of the west tropical coast of America, but returned in April. Acknowledgments are due to George Perie, Esq., general manager of the Pacific Steam Navigation Company, for aiding Mr. Bradley's exploration by the reduction of fares and freight from Callao and Guayaquil to Panama, and to David Hoadly, Esq., President of the Panama R. R. Company, and F. W. G. Bellowes, Vice-President of the Pacific Mail Steamship Company, for giving him a free passage home and free transportation for all his collections. The College is, also, under obligations to E. P. Larkin, Esq., for hospitalities and aid given to Mr. Bradley at Zorritos, Peru.

Among the other more important collections are a valuable lot of new and rare Corals and Echinoderms from Brazil, received from Prof. C. Fred. Hartt; a fine set of Pacific-Ocean Corals presented by Mr. Horace Mann; an interesting collection of shells and Echinoderms, many of them new to us, brought from the Gulf of California by Capt. J. Pedersen; numerous native insects from Amos Shepard, Esq.; a valuable lot of authentically labelled insects from Edward Norton, Esq.; and a large and important collection of authentically labelled Corals and Echinoderms sent by Dr. Chr. Lütken, from the University Museum of Copenhagen. For forwarding the last and other collections from and to Europe, free of expense, thanks are due to the Smithsonian Institution.

One of the most interesting specimens received during the year is a young specimen, preserved entire in alcohol, of the rare and curious Central American Tapir, recently described by Prof. Theod. Gill, and previously known to naturalists only by a few skulls and an imperfect skeleton. This valuable donation was received from J. H. Sternbergh, Esq.

The important work of labelling and permanently cataloguing the entire collection has progressed rapidly and satisfactorily during the year. Mr. S. I. Smith has nearly completed the catalogue of crustacea, and has greatly advanced that of the insects. Mr. H. S. Williams has identified and catalogued a large number of shells and most of the reptiles. Mr. G. H. Perkins has done the same for large numbers of shells. Mr. F. L. Miles gave important aid in cataloguing the fishes, and other students have given assistance in the same manner. Most of the corals and echinoderms and many shells, remaining unarranged last year, have been identified and catalogued by Prof. Verrill, who has also described many of the new and rarer species in the Transactions of the Connecticut Academy of Arts and Sciences.

Several special collections have, also, been sent away to other naturalists for identification or for monographic work, and some of these have already been returned.

The number of collections sent away and received in exchange has also greatly increased, and, as rapidly as our time and resources will admit, this system will be still farther developed. Several expeditions have been fitted out or materially aided with apparatus and alcohol for making zoölogical collections. From some of these valuable returns will be expected during the spring.

LIST OF DONATIONS DURING THE YEAR.

PANAMA EXPEDITION. Subscription of 1867. *Collected by F. H. Bradley.*—Fishes, and Marine Invertebrates, from Paita, Peru; Reptiles, Fishes, Insects, and Marine Invertebrates, Zorritos, Peru; Mollusca, Crustacea, and Insects, Tumbez, Peru; Insects and Crustacea, Guayaquil, Equador; Mollusca, Panama and Aspinwall,	9750
Frank L. Dubois, U. S. N.—Lepidoptera, Panama,	106
J. F. Reeve.—Squilla, Monstrosities, and Coral Snake, Guayaquil, Equador,	5
F. H. Bradley, Y. C. 1863.—Mammals, Menobranchi, Reptiles, Fishes, Insects, and Mollusca, Crawfordsville, Ind.; Turtle, Insects, and Mollusca, Illinois; Mollusca, New York; Insects, New Haven, and Milford, Ohio,	995
J. H. Sternbergh, Panama.—Tapir (*Elasmognathus Bairdii*), entire young in alcohol,	1

Amos Shepard, Esq., Plantsville, Conn.—Insects, Bats, Mole, Shrew, Plantsville; Salamander, Troy, New York,	475
Chas. R. Dodge, Department of Agriculture, Washington, D. C.—Insects, Washington and Illinois,	82
C. W. Chapman, New Haven.—Insects, New Haven,	19
A. G. Clark (S. S. S.).—Insects, Ohio and New Haven,	42
C. M. Clark (S. S. S.).—Reptiles, Myriapod, Texas,	8
G. A. Jackson (S. S. S.).—Orthoptera, Graylock Mt., North Adams, Mass.,	19
Chas. J. Sheffield (S. S. S.).—Crustacea, Long Island,	12
Landon Ketchum and *Chas. J. Sheffield.*—Insects, South America,	117
Edward Norton (Class of 1844), Farmington, Conn.—Insects, mostly identified species, from Connecticut, Florida, and Louisiana; Shells, Florida,	136
G. F. Bailey and *F. L. Miles* (S. S. S.).—Fish, New Haven,	12
Mrs. Amos Binney, New Haven.—Bat, New Haven,	1
T. S. Gold (Y. C. 1838), West Cornwall, Conn.—Larvæ of the currant saw-fly, W. Cornwall,	30
J. H. Grove (S. S. S.).—Insects, etc., Danville, Pa.	26
Joshua Coit (Y. C., 1819), New Haven.—Insects, New Haven,	3
D. W. Harris (S. S. S.).—Insects, New Haven,	2
Dr. H. A. Dubois, New Haven.—Spiders from Colorado,	2
W. W. Denslow, Esq., New York.—Insects and Land Shells, New York,	3
Mineralogical Excursion.—Insects from New Jersey,	7
Yale Missionary Society.—Shells, Corals and Echinoderms, Pacific Ocean,	40
Prof. W. H. Brewer.—Starfishes, New Hampshire; Insects, New Haven,	4
Prof. Addison Van Name.—Insects, New Haven,	21
Prof. O. C. Marsh.—Skulls and Bones, Fish, Insect, New Haven,	10
Prof. D. C. Eaton.—Bird's eggs, Reptiles, Insects, Myriapods, New Haven,	44
Prof. G. J. Brush.—Echinus, Florida; Insect, New Haven,	2
E. S. Morse, Salem, Mass.—Worms parasitic in the gills of clam, Beverly, Mass.	5
William Cook (S. S. S., Class of 1861, Y. C.).—Insects, New Haven,	3
Horace Mann, Cambridge, Mass.—Corals (*Pocillipora*, etc.), Hawaiian Isls.	44
Samuel Swift (S. S. S.).—Snake, New Haven,	1
Mrs. L. H. Smith, Norway, Me.—Insects, Norway, Me.,	20
Miss Lillie Blaikie, Boston, Mass.—Corals, Bryozoa, Sponge, Ebon Isl.,	8
H. S. Williams (S. S. S.).—Insects, New Haven; Shells, Watch Hill, R. I.,	25
Henry Richards, Hillsboro, Ill.—Orthoptera, Nebraska,	6
Horace Mansfield, New Haven.—Larvæ of *Prionus*, New Haven,	22
E. T. Nelson, B. A. (S. S. S.).—Insects, Land and Fresh-water Shells, Ohio; Insects, Shells, New Haven,	407
F. L. Miles (S. S. S.).—Fish, Reptiles, Mollusca, Crustacea, New Haven; Fish, Reptiles, Insects, Austerlitz, N. Y.	478
H. S. Williams and *F. W. Stowell* (S. S. S.).—Crustacea, Long Island Sound,	85
A Daggett, Jr., New Haven.—Insects, New Haven,	2
Prof. A. E. Verrill.—Insects, New Haven and vicinity, Norway, Me., New York; Starfishes, Echini, Mollusca, Crustacea, Annelids, Portland, Me.; Limnæa, Salem, Mass.; Reptiles, New Haven; Reptiles, Bird's nest and eggs, Orange Co., N. Y.; Myriapods, Norway, Me.,	403
Prof. A. E. Verrill and *Zoölogical Class* (Class 1868, S. S. S.).—From Zoölogical Excursions, Reptiles, Fishes, Mollusca, Insects, Worms, Crustacea, Radiates, New Haven and vicinity,	719
S. I. Smith (S. S. S., 1867).—Insects, Norway, Me.; Insects, Reptiles, Mollusca, New Haven,	377
J. M. Chapin (Y. C.)—Shells and Corals	39
F. W. Stowell (S. S. S.).—Crustacea and Annelids, L. I. Sound,	16
Stephen H. Bronson, M.D. (S. S S.).—Sertularia, and anatomical preparations of Crustacea, New Haven,	4
J. Matthew Jones, Halifax, N. S.—Marine Invertebrates, Bermuda and Nova Scotia,	80
G. H. Perkins, B. A. (S. S. S.).—Turtle shell, New Hampshire; Shells, New Haven,	51
H. R. Mighels, Carson City, Nevada.—Shells from California,	116

G. D. Miller (Y. C.).—Birds' eggs from northern New York, etc.; Shells, Corals, Echinoderms, various localities,	755
W. C. Hickok, M. D., Burlington, Vt.—Rare Shells, Lake Champlain,	25
F. H. Hathorn (Class of 1867).—Strombus gigas, West Indies,	1
G. H. Landis (Class of 1867).—Strombus gigas, West Indies,	1
R. Munson, Hamden.—Fish, Hamden,	6
Seth Cruttenden, New Haven.—Pure-blood Terrier,	1
John J. Matthias (Class 1866, S. S. S.), New Haven.—Skin of Snake and Whale's tooth, South America,	2
Prof. B. Silliman.—Crustacea, Mollusca, Fishes, etc., Coast of Nicaragua; Cyclops, Clear Lake, Cal.,	560

RECEIVED IN EXCHANGE.

A. Assmann, Breslau, Prussia.—European Lepidoptera and Coleoptera, 208 species,	619
Boston Society of Natural History.—Corals and Echinoderms, various localities, 38 species; Crustacea, 13 species,	145
Essex Institute, Salem, Mass.—Ophiurians, Zanzibar, 3 species; Corals, Singapore,	9
University Museum, Copenhagen, through Dr. Chr. Lütken.—Echinoderms, Acalephs, Polyps, Corals, 145 species,	220
G. H. Perkins (S. S. S.).—Gorgonia, Shells, Africa; Fresh-water Shells, Illinois, etc., 70 species,	709
Prof. C. Fred. Hartt, New York.—Corals, Echinoderms, Worms, Crustacea, Spiders, Mollusca, Fishes, and Reptiles, Coast of Brazil; Corals and Echinoderms, St. Thomas,	300
Dr. Albert Kölliker, Würzburg, Bavaria.—Microscopic preparations of Gorgonidæ,	35
Charles G. Brewster, Boston, Mass.—Corals, Singapore; Crustacea and Radiata, Europe, 25 species,	50

BY PURCHASE.

Fred. A. Munson, New Haven.—Tænia solium,	1
Dr. Chas. H. Van Patten, 12 species of Birds, Guatemala,	12

COLLECTIONS SENT AWAY IN EXCHANGE.

A. Assmann, Breslau, Prussia.—Insects from New England, 201 species,	635
Henri de Saussure, Geneva.—Orthoptera from New England, 43 species,	141
Dr. P. P. Carpenter, Montreal, Canada.—Mollusca from the West coast of America, 62 species,	361
Museum of Comparative Zoölogy, Cambridge, Mass.—Mollusca from various localities, 45 species; Echinoderms and Corals, 67 species,	338
Edwin Bicknell, Salem, Mass.—Echinoderms, spines and corals, 49 species,	49
Prof. T. Glover, Department of Agriculture, Washington, D. C.—New England Lepidoptera, 10 species,	13
S. H. Scudder, Boston Society of Natural History.—New England Insects, 13 species,	25
Essex Institute, Salem, Mass.—Echinoderms from the West coast of America, 11 species,	23
E. T. Nelson (S. S. S.).—Marine Shells, New England, 15 species,	28
F. W. Stowell (S. S. S.).—Marine shells, New England, 15 species,	27
G. H. Perkins (S. S. S.).—Corals and shells, 6 species,	14
A. Shepard, Esq., Plantsville, Ct.—New England Butterflies, 36 species,	46
Dr. Albert Kölliker, Würzburg, Bavaria,—Halcyonoid Polyps, 104 species,	168
Boston Society of Natural History.—Echinoderms and corals, West coast of America, etc., 21 species,	43
E. P. Larkin, Esq.—Corals, West coast of America, 26 species,	26

2. MINING AND METALLURGICAL MUSEUM.

The following gifts have been received in the mining and metallurgical museum, from the parties whose names are specified in connection with each donation.

Gould & Curry Silver Mining Co., through *Louis Janin, Esq.*, Superintendent, Virginia City, Nevada.—Suite of specimens illustrative of the ores and methods of extraction in use in the Gould & Curry Mill, with specimens of amalgam, retorted metal, and bullion.

Ellsworth Daggett, PH.B. (S. S. S. 1864), Superintendent of stamp-mill, Virginia City.—A specimen of crystallized amalgam; also drawings of stamps and machinery of the Gould & Curry Co.

Gideon E. Moore, PH.B. (S. S. S. 1861), Assayer of the Gould & Curry Metallurgical Works, Virginia City.—Suite of mill products, and manuscript description of the Washoe Metallurgical Processes.

R. L. Crooke, *Esq.* (Sheffield Laboratory, 1863–6), Metallurgist, New York.—A collection of specimens of commercial pig-lead, solder. and other lead alloys; also specimens of ingot tin and tin-foil.

R. L. Crooke, *Esq.* and *J. A. Macdonald*, *Esq.* (Sheffield Laboratory, 1864–66), Metal Refiners.—A suite of Canadian antimony-ores, with cake of metallic antimony and furnace products illustrative of the smelting of antimony ores; also specimens of spelter dross, with ingots of refined zinc manufactured therefrom.

Prof. B. Silliman.—A suite of specimens illustrative of the gold quartz mines in Grass Valley, California; and of the telluret gold ores of Tuolumne Co., besides extensive collections of gold, silver and copper, ores from other portions of California, Idaho, Nevada, and Arizona. Also, a collection of tin ores from Durango, Mexico, and Idaho.

Park, McCurdy & Co., Copper Refining Works, Pittsburgh.—Specimens of sheet-copper, and copper-bars and rods.

Park, Brothers & Co., Black Diamond Steel Works, Pittsburgh, Pa.—A suite of specimens of blister, ingot, and bar steel illustrative of the manufacture of steel by the crucible and cementation processes.

A. Henry, *Esq.*, Agent of the East Tennessee Iron Works.—Specimens of manganesian iron ore and pig-iron from East Tennessee.

Frank Semple, *Esq.* (Sheffield Laboratory, 1862–4), Pittsburgh.—Specimen of cyano-nitrid of titanium from the hearth of a blast furnace.

East Tennessee Copper Co.—Specimen of ingot copper.

Gen. H. P. Adams, Superintendent of Golconda Mine, Canada.—Collection of quartzose ores and auriferous sand.

Prof. A. P. Rockwell.—Suite of Specimens illustrating the dressing of copper ores at the Lake Superior Copper Mines; also iron ores from near Marquette.

Prof. A. Agassiz, Harvard University.—Suite of specimens from Calumet Mine, Lake Superior.

The Colwells, Shaw & Willard Mnfg. Co., New York.—Specimens of lead-encased block tin pipe.

Prof J. S. Lippincott, *Esq.*—Specimens of cryolite and chemical products obtained therefrom.

Prof. A. E. Verrill.—Iron ores from Orange and Essex Cos., New York.

Prof. O. D. Allen (S. S. S. 1861), Institute Technology, Boston.—Specimens of crystallized slags and furnace products.

Dr. Chas. Johnson, Georgetown, Colorado.—Silver and gold ores from Colorado.

Saml. Coit, *Esq.*, President.—Specimens of spathic iron ore, pig iron, bar, and steel from the works of Silver-Steel Co., Roxbury, Conn.

Thos. F. Collier, Esq. (S. S. S. 1866–8), St. Louis, Mo.—Lead and Iron ores from Missouri.

H. E. Day, Esq., President.—Suite of copper and silver ores from the Suffield Mine, Canada East.

Prof. Peter Collier (Y. C. 1861, and Sheffield Laboratory 1861–6), University of Vermont.—Collection of quartzose gold ores from western North Carolina.

Charles J. Sheffield, Esq. (Sheffield Laboratory, 1865--7).—Suite of quartzose and pyritiferous gold ores from Brasstown Creek, North Carolina.

Hegeler & Matthiessen, La Salle Spelter Works, Ill.—An ingot of metallic zinc.

Prof. J. Johnston, Wesleyan University.—Specimens of zinc ores and metallic zinc from Bellevue Zinc Works, Mineral Point, Wis.

Dr. E. S. T. Arnold, Yonkers, N. Y.—Gold and silver ores from California and Nevada.

Hon. C. N. Riotte, late U. S. Minister to Costa Rica.—Specimens of gold ores from Costa Rica.

H. S. Williams, Esq. (S. S. S. 1868).—Specimen of zincite from Mine Hill, N. J.

Dr. R. A. Fisher (Sheffield Laboratory, 1858–9), Grass Valley, Cal.—Specimens of gold and silver ores from California and Mexico.

John H. Grove, Esq. (Sheffield Laboratory, 1865–8), Danville, Pa.—Specimens of iron ores and pig-iron from the Montour Iron Works, Pa.

Joseph Wharton, Esq., Philadelphia.—Model of a block of Belgian zinc furnaces at the Lehigh Zinc Works, Pa.; also specimens of metallic nickel and nickel alloys from the Camden Nickel Works.

Reuben J. Johnson, Esq., Salem, Iowa.—Specimens of gold and silver ores from Montana.

Purchased.—A collection of ores and furnace products from the Mansfield Copper-Slate District, Prussia.

§ 3. GEOLOGY.

During the past year the Geological Collections of the College have been largely increased, mainly through donations and by purchases. Considerable progress has also been made in cataloguing and rearranging the collections already in the Museum, and in this work Dr. W. N. Rice, Mr. E. T. Nelson and Mr. G. H. Perkins, students in this department, have rendered important assistance.

Among the recent acquisitions that deserve especial mention are those illustrating the Ichnology of the Connecticut Valley, the more important of which are a series of ten slabs of fossil foot-prints, collected by Mr. T. M. Stoughton, of Gill, Mass.; forty-seven slabs collected by Mr. O. H. Lebourveau; and several fine specimens obtained of Mr. Roswell Field, all from the vicinity of Turners' Falls, Mass., and purchased with the income of the Peabody Fund. In addition to these, two valuable slabs from the same locality were presented to the Museum by Mr. T. M. Stoughton, and five by Prof. O. C. Marsh. The Connecticut River, and New Haven, Hartford and Springfield Railroads, with great liberality, transported these extensive collections to New Haven free of charge. The Middlesex Quarry Company, of Portland, Ct., has also recently presented to this department four interesting specimens, Messrs. Brainard & Co. two slabs, and the Shaler & Hall Company one slab of foot-prints, all from the Portland quarries, and forming together a valuable addition to the Museum. His Honor, Mayor Sperry, of New Haven, has kindly allowed the entire collection of Ichnology to remain for the present in the State House.

One of the most interesting additions to the geological collections during the past year is a remarkably perfect skeleton of the Irish fossil Elk (*Megaceros Hibernicus*), presented to the Museum by Prof. O. C. Marsh. This specimen was found in a peat-bog near Limerick, Ireland, about twenty years since, and is undoubtedly one of the largest, if not the largest, ever discovered, the antlers having an expanse of thirteen feet and two inches.

A large and very valuable collection of Tertiary fossils from the greensand beds of the well known Squankum Marl Company, near Farmingdale, N. J., has recently been presented to the Peabody Museum by O. B. Kinne, Esq., of New York. This important acquisition is of peculiar interest, as it consists of several thousand specimens, all from a single locality, and many of them new to science, a study of which will doubtless solve the question as to the exact age of this remarkable marl deposit, now proving of such great value as a fertilizer. This collection has been brought together, with great labor and expense, during the last five years, by Mr. Kinne, while Superintendent of the Squankum Company, and the thanks of all friends of science are justly due to him for his zeal and generosity.

Among the additions to the Museum, previous to the present year, not hitherto publicly acknowledged, the following are worthy of particular mention:—An interesting collection of Silurian fossils from Tennessee, presented to the Cabinet by Prof. J. M. Safford, of Nashville. A suite of fossil plants from Maryland, received from R. P. Uhler, Esq., of Baltimore. A fine series of Silurian and Devonian fossils from Indiana and Michigan, presented by Prof. Alex. Winchell, of Michigan University; and a large collection of Post-Tertiary fossils, from Maine, Labrador, and Canada, purchased of Dr. A. S. Packard, Jr., of Salem, Mass.

DONATIONS RECEIVED DURING THE PAST YEAR.

Dr. E. Foreman, Eatonsville, Md.—Fossil impressions from the Trias, near Emmetsburg, Md.,	30
Sylvanus Butler, *Esq.*—Fossils from Ionia Co., Mich.,	4
Dr. A. T. Pratt (Y. C. 1846).—Fossils from Mt. Cassius, Syria,	2
Reuben J. Johnson, *Esq.*, Salem, Henry Co., Iowa.—Silicified wood from Montana,	6
Miss Sarah E. Hemenway, Salem, Iowa.—Geode from Jackson, Iowa.	1
Henry Richards, *Esq.*, Monroe, Orange Co., N. Y.—Rocks and fossils from Dakota,	30
H. C. Kingsley, *Esq.* (Yale College).—Slab with glacial markings, from the Hamilton of Ulster Co., N. Y.,	1
George M. Kellogg. Esq., Keokuk, Iowa.—Fossils from St. Louis limestone the of Iowa,	20
Wabash College, Indiana.—One slab containing Pentremites, from the Subcarboniferous of Crawfordsville, Ind.,	1
Sir Wm. E. Logan, Montreal, C. E.—Fine specimen of *Eozoon Canadense*, from the Laurentian of Petite Nation, Canada,	1
Prof. O. C. Marsh (Yale College).—Skeleton of fossil Elk from Ireland; Fossil foot-prints from Turners' Falls, Mass.; Silurian and Devonian fossils, New York; Cretaceous and Tertiary fossils, New Jersey; European fossils from various localities,	2630
T. M. Stoughton, *Esq.*, Gill, Mass.—Foot-prints from Turners' Falls, Mass.,	2
Middlesex Quarry Co., Portland, Ct.— " " Portland,	4
Brainard & Co. Quarry Co., Portland, Ct.—Foot-prints from Portland,	2
Shaler & Hall Quarry Co., Portland, Ct.— " " "	1
Col. E. Jewett, Utica, N. Y.—Tracks and impressions from the Clinton of New Hartford, N. Y.,	30
Prof. G. F. Barker (Yale College).—*Paradoxides Harlani*, from Braintree, Mass.,	1
F. B. Meek, *Esq.* Washington, D. C.—Devonian and Carboniferous fossils from Kansas,	15
Dr. F. V. Hayden, Washington, D. C.—Cretaceous fossils from Nebraska,	30
E. P. Larkin, *Esq.*, Zorritos, Peru, and *F. H. Bradley*, *Esq.*, New Haven, Ct.—Tertiary fossils from Peru,	878
Dr. George A. Ward, New Haven, Ct.—Triassic fishes from Sunderland, Mass.,	2
Prof. A. E. Verrill (Yale College).—Post-Tertiary Fossils from Port Kent, N. Y.,	20
J. E. Clayton, *Esq.*, New York.—Fossils from Nevada,	12
Henry Hotchkiss, *Esq.*, New Haven, Ct.—Specimens from Artesian well, New Haven,	5
Prof. S. S. Haldeman, Columbia, Pa.—*Scolithus linearis* from Columbia, Pa.,	3
Prof. B. Silliman (Yale College).—Mastodon remains from near Jamestown, Tuolumne Co., Cal.,	2
Chas. J. Sheffield, (Sheffield S. S.), New Haven, Ct.—Fossil fern from Coal-measures of Tennessee,	1
Dr. Thomas T. Minor, New Haven, Ct.—Fossils from Nebraska,	7
O. B. Kinne, *Esq.*, New York.—Vertebrate and invertebrate Tertiary fossils from Upper Greensand bed of Squankum, N. J.,	3000
Wm. N. Longworth, *Esq.* (Class 1844, Yale College), Louisville, Ky.—Fossil plants, fishes, shells and corals, from Devonian of Kentucky,	200
Prof. W. C. Kerr, Raleigh, N. C.—Palæotrochis and enclosing rock from North Carolina,	50
W. G. Mixter, (Sheffield S. S.), Rock Island, Ill.—Corals from Devonian of Illinois,	7
E. T. Nelson (Sheffield S. S.), Galion, O.—Devonian fossils from Ohio,	100
G. H. Perkins, (Sheffield S. S.), Galesburg, Ill.—Subcarboniferous fossils from Iowa and Illinois,	30
H. S. Williams, (Sheffield S. S.), Ithaca, N. Y.—Devonian fossils from Ithaca, N. Y.,	20

H. Barnes, Esq., C. E., Halifax, N. S.—Coal plants from Sydney, Cape Breton,	15
Prof. C. F. Hartt, Poughkeepsie, N. Y.—Fossils from the Silurian of New Brunswick, and the Cretaceous of Brazil,	30
G. D. Miller, Esq. (Class of 1869, Yale College), New Haven, Ct.—Fossils from various localities,	6
Prof. C. A. White, Iowa City, Iowa.—Fossil corals from Iowa,	2

COLLECTIONS OBTAINED BY PURCHASE.

F. H. Bradley, Esq., New Haven, Ct.—Fish remains from the Hamilton of Western New York,	3500
H. A. Greene, Esq., Mt. Morris, N. Y.—Fish remains from the Hamilton and Chemung of New York,	1000
J. A. Allen, Esq., Cambridge, Mass.—Devonian and Subcarboniferous fossils from Iowa,	250
T. M. Stoughton, Esq., Gill, Mass.—Fossil foot-prints from Turners' Falls, Mass.,	10
O. H. Lebourveau, Esq., Montague, Mass.—Fossil foot-prints from near Turners' Falls, Mass.,	47
Roswell Field, Esq., Gill, Mass.—Fossil foot-prints from near Turners' Falls, Mass.,	4

4. MUSEUM OF ARCHÆOLOGY AND ETHNOLOGY.

This department of the College has been established within the past year, in response to the rapidly increasing interest in questions relating to the origin, antiquity, and early history of Man. It has for its main object the formation of collections illustrating what is known of the aboriginal races of North and South America, both in pre-historic time, and during their subsequent progress toward civilization; and also, so far as may be necessary for comparison, of collections relating to the primitive races of other countries.

The acquisitions already made are deposited in the new Art Building, where ample accommodations for further additions have been provided. The facilities for collecting specimens relating to the early races of America are every year rapidly diminishing, and it is earnestly hoped that all friends of the College will lose no opportunity of securing for this new Museum objects of interest bearing upon the important branch of science it is designed to illustrate.

Among the articles which it is especially desirable to obtain are the following:—

1. Implements of stone, such as axes, gouges, chisels, mortars, pestles, pipes, tomahawks, spear-heads, arrow-heads, &c.

2. Implements of copper or bronze, such as axes, chisels, spear-heads, knives, &c.

3. Articles of earthen-ware, such as images of any kind, vases, pots, pipes, &c.

4. Articles of dress, weapons, domestic utensils, &c., of the various tribes of North and South American Indians, and also of the Eskimos.

5. Images and sculptures, or casts of them, particularly those made by the early inhabitants of Mexico, Central America, Peru, and Chili.

6. Mummies, skeletons, or parts of skeletons, especially the skulls, of any of the above named races.

Specimens intended for the Museum may be sent to the care of Prof. O. C. Marsh.

5. OTHER GIFTS.

The collection of Maps and Charts has received an important gift from the authorities of the United States Coast Survey, through Prof. J. E. Hilgard, *Assistant in charge*, at the request of Hon. O. S. Ferry (Y. C. 1841), U. S. Senator from Connecticut, —consisting of a series, nearly complete, of the admirable charts which are published by the Survey.

By the liberality of E. C. Read, Esq., of New Haven, a valuable eight-day sidereal chronometer has been added to the instruments of the Astronomical Observatory. The thanks of the Governing Board have been returned to the donors of these acceptable gifts.

IV. Public Lectures to Mechanics.

The third annual course of public lectures to Mechanics and others who are interested in scientific subjects has been delivered during the past year. Notwithstanding the repeated inclemency of the weather, the Hall was uniformly filled on Monday and Thursday evenings, and the speakers have repeatedly been called upon to exceed the appointed limits of an hour.

PROGRAMME.

I.	Jan.	23.	The Paris Exposition,	Prof.	Norton.
II.	"	27.	Meteorites, Fire-balls, and Shooting Stars,	"	Lyman.
III.	"	30.	Salt, its Origin and Uses,	"	Brewer.
IV.	Feb.	3.	Physical Geography of New England,	"	Gilman.
V.	"	6.	Trees and Timber of New England,	"	Eaton.
VI.	"	10.	Roots of Plants,	"	Johnson.
VII.	"	13.	Leaves of Plants,	"	Johnson.
VIII.	"	17.	Language as an Instrument,	"	Whitney.
IX.	"	20.	The Languages of the World,	"	Whitney.
X.	"	24.	The Copper Regions of Lake Superior,	"	Rockwell.
XI.	"	27.	Geology of New Haven and its vicinity,	"	Marsh.
XII.	Mar.	2.	Machinery of the Paris Exposition,	"	Norton.
XIII.	"	5.	Metallurgy of Lead,	"	Brush.
XIV.	"	9.	Metallurgy of Tin,	"	Brush.
XV.	"	12.	Light, and how we See,	"	Wright.
XVI.	"	16.	The Canker Worm,	"	Verrill.
XVII.	"	19.	Water for Drinking in Cities,	"	Brewer.
XVIII.	"	23.	Analysis of the Spectrum,	"	Barker.

V. Relations with the State Board of Agriculture.

At the annual meeting of the Board of Agriculture of the State of Connecticut, held in Hartford Jan. 14, 15, and 16, two public lectures were delivered by the Professor of Zoology, Mr. Verrill, on "The laws of Reproduction in Cattle," and two by the Norton Professor of Agriculture, Mr. Brewer, on "Parasitic Diseases that injure the flesh of Cattle for food," and on the "Possibilities and Limits of Improvement in Breeds of Cattle." Prof. S. W. Johnson has continued to be a member of the Board, and is also Chemist to the State Agricultural Society.

VI. Sunday Evening Lectures.

During the last two years, several courses of Sunday evening lectures have been given to the students of this department. The first course was delivered by several clergymen connected with the college and with the churches of New Haven, on practical, moral, and religious themes. President Woolsey, Professors Fisher, Dwight, Day, and Rev. Messrs. Leonard Bacon, William Patton, Edwin Harwood, Thomas H. Burch, and W. W. Andrews, occupied successive evenings. This was followed by a course of lectures from Professor Fisher, on the early History of the Christian Church. A course of lectures by Prof. D. C. Gilman, on Biblical Geography, has since been given.

VII. Prizes.

The Governing Board for several years past have been enabled to offer prizes for the encouragement of special industry and application in the different departments of the school. These premiums have been placed at the disposal of the instructors by generous gifts from the Berzelius Society and other friends of the school. With the exception of the Prize in Chemistry offered by Prof. Silliman, such funds are now exhausted. It would be gratifying to the instructors if gentlemen who are interested in promoting the scholarship of our students would enable the Board to continue these rewards. We should welcome either a permanent fund, of which only the income would be expended, like the Townsend and DeForest Prizes in Yale College, or occasional offers of sums of moderate amount for success in examinations, or for improvement in scholarship, or for investigations in some department of scientific research, or for good English compositions, or for any other appropriate object. One or two hundred dollars a year for promoting scientific excursions would prove a great stimulus to the enthusiasm of the students.

The Berzelius prizes awarded at the anniversary in July, 1867, were as follows: First prize of $30, in gold, to Sidney I. Smith of Norway, Me., for an essay "On Secondary Causes in the Geographical Distribution of Plants and Animals;" Second prize of $20, in gold, divided between William G. Mixter of Rock Island, Ill., and Daniel H. Wells of Upper Aquebogue, N. Y., for essays of equal merit, by the first named "On the Chemistry of Fuel," and by the last named "On the Improved Methods of Determination employed in the U. S. Coast Survey."

Berzelius Prizes for 1868.

By the liberality of the Berzelius Association, the Governing Board are enabled to offer this year four prizes, equal in rank and equal in amount, for the four best essays presented on the subjects below mentioned.

Any member of the S. S. School may compete for any or all of these prizes, except the first named, which is offered only to those who are candidates for the degree of Ph.B. in one of the regular courses of the school.

Essays must be submitted to the Secretary of the school (through the Post Office or in person), on or before June 1st, 1868.

SUBJECTS.

I. For the best English Composition, $10 in gold.
  1. An inquiry into the various estimates which have been placed on the intellectual and moral character of Lord Bacon.
  2. An examination of the various theories in respect to the Origin of Language.
  3. The Newspaper as a power in modern civilization.

II. In Civil and Mechanical Engineering. For the best essay, $10 in gold.
  1. On the most important recent improvements in the construction of Rail Roads.
  2. On the economic applications of Electricity.

III. In Natural History. For the best essay, $10 in gold.
  1. A comparison of the extinct and existing faunas or floras of any country.
  2. The influence of insects on the vegetation of any region.

IV. In Chemistry and Physics. For the best essay, $10 in gold.
  1. On Osmose.
  2. On recent developments of the Alkali industry.

VIII. Anniversary Exercises.

The anniversary exercises of this department were held in Sheffield Hall, on the Monday (July 15, 1867) before the College Commencement. The State Board of Visitors were represented by Governor English, Lieutenant Governor Hyde, Senator George Beach, and Secretary Birdsey G. Northrop. President Woolsey and other members of the Corporation and of the different Faculties of the College were also present. The programme was as follows:

PROGRAMME.

Theses marked with a star (*) were not publicly read.

1. Prayer by the President.
2. Thesis, "A comparison of the Agriculture of the United States, France, England, and Germany;" by PETER H GROVE, Danville, Pa.
3. Prize Essay, "On the Chemistry of Fuel;" by WILLIAM G. MIXTER, Rock Island, Ill.
4. Thesis,* "On the supposed conversion of ammonia into nitric acid by atmospheric oxygen;" by LUTHER H. WOOD, West Haven.
5. Prize Essay, "On the improved methods of determination employed in the U. S. Coast Survey;" by DANIEL H. WELLS, Upper Aquebogue, N. Y.
6. Thesis,* "On certain principles of Political Economy applicable to our national development;" by CHARLES H. HUBBARD, Sandusky, Ohio.
7. Solution of a Problem in Constructive Engineering; by LYMAN S. FERRY, New Haven, and by VOLNEY G. BARBOUR, Bristol.
8. Thesis,* "Constituent Minerals of West Rock, New Haven;" by WILLIAM G. MIXTER, Rock Island, Ill.
9. Thesis,* "On the Aqueous Vapor of the Atmosphere;" by ROBERT M. GROVE, Danville, Pa.
10. Thesis,* "On the Iron resources of the United States;" by JOSEPH T. WHITTLESEY, New Haven.
11. Thesis,* "On Deep Sea Soundings;" by JOHN KENNEDY BEESON, Uniontown, Pa.
12. Thesis,* "A monograph of the Orthoptera of the State of Maine;" by SIDNEY I. SMITH, Norway, Me.
13. Prize Essay, "On secondary causes in the Geographical Distribution of Plants and Animals;" by SIDNEY I. SMITH, Norway, Me.
14. Thesis, "An illustration of the principle of Cephalization in a natural classification of Echinoderms;" by WILLIAM H. NILES, Cambridge, Mass.
15. Thesis, "On Darwin's Theory of the Origin of Species;" by WILLIAM N. RICE (B.A. Wesl.), Springfield, Mass.

After the exercises of the graduating class were concluded, there was a brief intermission, and an address was then delivered by Professor C. S. Lyman, on "Scientific Education in its Relations to Industry." By the liberality of a friend of the School, this address has since been printed and distributed. Hon. Justin S. Morrill, U. S. Senator from Vermont, author of the Congressional bill appropriating a portion of the national domain for the endowment of Colleges of Agriculture and the Mechanic Arts, has been invited by the Governing Board to deliver an address at the anniversary in July, 1868.

IX. Degrees.

At the Commencement, July 17, 1867, the following persons, who had completed their courses of study in this department, and had successfully passed the final examination, were admitted by the Corporation of Yale College to the Degrees which are specified:

DOCTOR OF PHILOSOPHY.

WILLIAM N. RICE (B.A. Wesl.), Springfield, Mass., Professor elect in Wesl. Univ.

BACHELORS OF PHILOSOPHY.

VOLNEY GILES BARBOUR,	*Bristol.*
JOHN KENNEDY BEESON,	*Uniontown, Pa.*
ALFRED CALDWELL,	*Wheeling, West Va..*
SAMUEL HOSMER CHITTENDEN,	*Madison.*
LYMAN STEWART FERRY,	*New Haven.*
PETER H GROVE,	*Danville, Pa.*
ROBERT MICHAEL GROVE,	*Danville, Pa.*
CHARLES HENRY HUBBARD,	*Sandusky, O.*
WILLIAM GILBERT MIXTER,	*Rock Island, Ill.*
WILLIAM HARMON NILES,	*Cambridge, Mass.*
SIDNEY IRVING SMITH,	*Norway, Me.*
DANIEL HALSEY WELLS,	*Upper Aquebogue, N. Y.*
JOSEPH THOMPSON WHITTELSEY,	*New Haven.*
LUTHER HODGES WOOD,	*West Haven.*

X. Library and Reading Room.

By the generosity of Mr. Sheffield, a special fund of $10,000 is provided for the maintenance of a library and reading room. By a gift of $2,000, from the various gentlemen whose names were mentioned in our last report, arrangements were also made for the purchase of such reference books as are needed as the foundation of the library. A part of this money has been expended within the year, by Prof. W. A. Norton, who was enabled, in his recent visit to Europe, to make a selection of recent books in the various branches of Civil Engineering. Many valuable donations of books have also been received, the titles of which are specified below. A Catalogue of the collection, upon cards, has been completed.

The list of Periodicals received is as follows. Many similar journals, which might be looked for in this list, are received in part by the Library of Yale College and in part by the Professors privately.

PERIODICALS RECEIVED.

AMERICAN.

Title.	How received.
American Journal of Science and Arts.	By gift of the Editors.
Scientific American.	"
American Artisan.	By subscription.
American Rail Road Journal.	"

Title.	How received.
American Gas Light Journal.	By subscription.
American Journal of Mining.	“
American Journal of Pharmacy.	“
American Farmer.	By gift of Messrs. Silliman & Dana.
Horticulturist.	By subscription.
American Agriculturist.	By gift of the Publishers.
Journal of the N. Y. State Agricultural Society.	By gift of the Society.
American Journal of Horticulture.	By subscription.
New England Farmer.	“
Southern Planter.	By gift of the Publishers.
Practical Entomologist.	By subscription.
California Mining and Scientific Press.	By gift of Prof. Brewer.
California Farmer.	By gift of the Editors.
Journal of the Franklin Institute.	By subscription.
American Naturalist.	“
American Journal of Conchology.	“
Transactions of the Connecticut Academy.	By gift of the Academy.
American Publishers' Circular.	By gift of the Publishers.
Bulletin of the Iron and Steel Association.	By gift of Prof. Brush.
BRITISH.	
Civil Engineer and Architect's Journal.	By subscription.
Practical Mechanic's Journal.	“
Engineer.	“
Mining Journal.	“
Farmer's Magazine.	“
Gardeners' Chronicle.	“
Zoölogist.	“
Ibis.	“
Annals and Magazine of Natural History.	“
Monthly Notices of the Astronomical Society.	“
Mechanics' Magazine.	By gift of Messrs. Silliman & Dana.
British Journal of Photography.	“
Ironmonger.	“
Journal of the Society of Arts.	“
Journal of the Chemical Society.	By subscription.
Chemical News.	“
CONTINENTAL.	
Cosmos.	By gift of Messrs. Silliman & Dana.
Comptes Rendus de l'Acad. des Sciences.	“
Les Mondes.	“
Moniteur de la Photographie.	“
Chemisches Central-Blatt.	By subscription.
Annales de Chimie et de Physique.	“
Berichte der deutschen Chemischen Gesellschaft.	“
Zeitschrift für Chemie.	“
Zeitschrift der Oberschlesischen Berg-Vereins.	“
Annalen der Landwirthschaft in Preussen.	“
Civilingenieur.	“
Polytechnisches Central-Blatt.	“
Technologiste.	“
Botanische Zeitung.	“
Hedwigia.	“
Zeitschrift für Wissenschaftliche Zoologie.	“
Archiv für Anthropologie.	“
Revue Universelle des Mines.	“
Journal d'Agriculture Pratique.	“
Revue et Magazin de Zoologie.	“
Annales des Ponts et Chaussées.	“
Bulletin de la Société Chimique de Paris.	“

CHIEF DONATIONS OF BOOKS RECEIVED IN THE LIBRARY, 1866 & 7.

Mr. Joseph E. Sheffield.—Natural History of the State of New York, 20 vols. quarto; U. S. Pacific Rail Road Reports, 13 vols. quarto.

Prof. William H. Brewer.—Appleton's New American Cyclopaedia, 16 vols. R. octavo.

Messrs. Silliman & Dana.—(*Eds. Amer. Jour. Science*), Sitzungsberichte der Akad. der Wissenschaften zu Wien, 1854–1867, (in numbers) 59 vols. 8vo.; Monatsberichte der Akademie zu Berlin, 1846–63, (in nos. nearly complete), 17 vols. 8vo: Jahrb. d. geologischen Reichsanstalt zu Wien, 1850–62, 10 vols. R. 8vo; Comptes Rendus de l'Academie des Sciences, Paris, 14 vols. complete, quarto, and several numbers; recent books and current periodicals, American and foreign, in various departments of science, about 150 vols. Total, 250 vols.

Prof. S. W. Johnson.—The Farmer's Magazine, London, 1839–1857, 36 vols. 8vo; Ratzeburg's Forst Insecten, 1839, 2 vols. 4to; Ladrey, Chemie de la Viticulture; and eighteen other octavo volumes.

Prof. George J. Brush.—United States Coast Survey, 1851–63, 12 vols. 4to; Phil. Acad. of Sciences Proceedings, 8 vols. 8vo; Zeitschrift d. Berg. akademie zu Freiberg, 8vo.

Prof. A. P. Rockwell.—Wagner's Jahresbericht der Chem. Technologie, 4 vols. 8vo.

Prof. W. A. Norton.—Jones's Observ. on Zodiacal Light, one vol. quarto, and seven quarto scientific pamphlets.

Prof. James D. Dana.—Lenoir's Gallerie d. ausgezeichn. Naturforscher, one vol. plates, folio and four other volumes.

Prof. Benj. Silliman.—Testarum conchyliorum Index; one vol. plates, folio; Johnson's Direct. of Gardening, 8vo; Hutchings' Scenes in California, 8vo; Bakewell's Geology, 1839, 8vo, and two other volumes.

Prof. C. S. Lyman.—Practical Mechanics' Journal, 10 vols. quarto.

Prof. W. D. Whitney.—Max Muller's Lectures on Language, 2 vols. 12mo; Whitney's Lectures on Language, 12mo.

Prof. D. C. Eaton.—Agassiz's Nat. Hist. of the U. S., 4 vols. quarto.

Prof. D. C. Gilman.—Illustrated Catalogue and Jury Reports of the great Exhib. of 1851, 6 vols. R. 8vo.; Jury Reports of Exposition of 1855, 2 vols. R. 8vo; United States Census of 1860, 4 vols, 4to.

U. S. Dept. of Agriculture.—Report and Bulletin.

U. S. Coast Survey.—Report for 1865.

U. S. Naval Observatory.—Wash. Astronom. Observations, 1851–2, 1864, 1865. 3 vols. quarto.

Class of 1867, Sheff. Sci. School.—Photographic Likenesses of the members of the Class; bound in full Turkey, quarto.

T. S. Gold, Esq. (Y. C. 1838), Sec. State Bd. of Agric.—Reports of Maine and Michigan Boards of Agricult., and of N. Y. State Agric. Soc., 3 vols. 8vo.

E. T. Welles, Esq. (Y. C. 1864), Chief Clerk U. S. Navy Dept.—Davis's Report on Interoceanic Canals and R. Roads. 8vo.

Mr. F. C. Beach, (S. S. S.)—The Pneumatic Dispatch.

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Alfred Banks Hill,	*Redding.*
William Rufus Hopson,	*Bridgeport.*
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Henry Hoyt Perry,	*Southport.*
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Walter Charles Riotte,	*New York City.*
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Harry Caldwell,	*Wheeling, West Va.*
Thomas Elwood Calvert,	*Newtown, Pa.*
Frederic Hosea Churchill,	*New Britain.*
Dorr Clark,	*Batavia, N. Y.*

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Bryant Burwell Glenny,	*Buffalo. N. Y.*
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Henry Herbert Swinburne,	*Newport, R. I.*
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William Bartlett Wilcox,	*Portland.*

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Wilbur Olin Atwater, B.A. Wesleyan.	*Brandon, Vt.*
Volney Giles Barbour, PH.B.	*Bristol.*
Beverly Scott Burton, PH.B.	*Philadelphia, Pa.*
Angus Cameron, LL.B.	*LeRoy, N. Y.*
Sherman Hartwell Chapman, B.A.	*Bridgeport.*
Thomas Fassitt Collier, B.A. Wash. Univ., St. Louis.	*St. Louis, Mo.*
Henry Coleman,	*Nahant, Mass.*
William Richard Cutter,	*Woburn, Mass.*
Rev. John Dickinson,	*Westville.*
Jesse Durland,	*Warwick, N. Y.*

James G. Gardner,	*Troy, N. Y.*
George Harrrison Gray,	*Springfield, Mass.*
John H. Grove,	*Danville, Pa.*
William D. Harris,	*Binghamton, N. Y.*
*Lewis Reed Lamport, M.D. University N. Y. City.	*New York City.*
Samuel Dyer Lawther,	*Fulton, Mo.*
Frederick Gold Lyman,	*Goshen.*
William Augustus Miles,	*Salisbury.*
William Gilbert Mixter, PH.B.	*New Haven.*
Edward Thomson Nelson, B.A. Ohio Wesl. Univ.	*New Haven.*
George Henry Perkins, B.A.	*New Haven.*
Charles Shepard Rodman, M.D.	*New Haven.*
George Baldwin Selden,	*Rochester, N. Y.*
Charles Joseph Sheffield,	*New Haven.*
Sidney Irving Smith, PH.B.	*New Haven.*
Daniel Halsey Wells, PH.B.	*Upper Aquebogue, N. Y.*

SUMMARY.

Seniors,	27
Juniors,	35
Freshmen,	36
Special Students,	27
TOTAL,	125

GEOGRAPHICAL DISTRIBUTION.

Connecticut,†	47
New York,	27
Massachusetts,	9
Pennsylvania,	8
Kentucky,	6
Ohio,	5
Missouri,	4
New Jersey,	3
Vermont,	3
Wisconsin,	2
Dist. of Columbia,	2
Illinois,	2
Delaware,	1
Maryland,	1
Rhode Island,	1
North Carolina,	1
West Virginia,	1
Michigan,	1
Canada,	1

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* Deceased.

† The number of State Scholarships is thirty-three.

PROGRAMME.

Object.

The object of the Sheffield Scientific School is to provide young men with instruction in the various departments of Mathematical, Physical and Natural Science. By an act of the Legislature it has been constituted the Connecticut college for the promotion of Agriculture and the Mechanic Arts, and has received the benefit of the land appropriation bestowed by Congress upon this Commonwealth. As a department of Yale College it shares in the advantages which pertain to that long established seat of learning. Private generosity has provided additional facilities for the prosecution of scientific studies.

Organization.

The care of the institution is intrusted, under the President and Fellows of Yale College, to a Governing Board of thirteen professors, who are also the instructors of the school, each of them representing some department of learning. Several other assistants are also employed.

The regular courses of study are arranged in seven sections, as follows:

I. Chemistry and Mineralogy.
II. Civil Engineering.
III. Mechanics.
IV. Mining and Metallurgy.
V. Agriculture.
VI. Natural History and Geology.
VII. Select Course in Science and Literature.

The arrangements of all these sections are fully exhibited below.

Building and Apparatus.

Sheffield Hall, in which most of the instruction is given, is a large and well arranged building containing recitation and lecture rooms for all the departments of the school, a hall for public assemblies and lectures, a drawing room for the engineering class laboratories for chemical and metallurgical investigations, a photographical room, an astronomical observatory, a museum a library and reading room, besides studies for some of the professors, where their private technical libraries and collections are kept.

The arrangements of Sheffield Hall, and also the various collections of the School and of the College (so far as the latter are applicable to this department), were described in the report for 1866–7.

APPARATUS OF INSTRUCTION.

The following is a summary statement of the material possessions applicable to the purposes of instruction:

I. *Pertaining to Sheffield Hall.*

1. Laboratories in Chemistry, Metallurgy, Photography and Zoology. (A laboratory in Physics and Mechanics is still very much wanted.)
2. Metallurgical Museum of Ores, Furnace Products, etc. (an extensive and increasing collection).
3. Agricultural Museum of Soils, Fertilizers, useful and injurious Insects, etc.
4. Astronomical Observatory, having a very good equatorial telescope, by Clarke and Son of Cambridge, a meridian circle, etc.
5. A library and reading room, containing books of reference and a selection of German, French, English and American scientific journals.
6. A collection of models in Architecture, Civil Engineering and Mechanics, and of diagrams adapted to public lectures.
7. A collection of Maps and Charts, topographical, hydrographical, geological, etc.
8. The private mineralogical cabinet of Prof. Brush, the herbariums of Professors Eaton and Brewer, the collection of native birds of Professor Whitney, the astronomical instruments of Professor Lyman,—all freely accessible to qualified students.

II. *Pertaining to the University.*

1. The College Library, consisting of 48,000 volumes, and the Society Libraries, consisting of 26,000 volumes; TOTAL, 74,000 volumes.
2. Two Reading Rooms, one containing the newspapers and literary journals of England and the United States;—the other, quarterlies and monthlies in various languages and departments of learning.
3. The Cabinet of Minerals and Fossils,—an extensive and well known collection.
4. The Collections in Natural History.
   (These collections and the mineral cabinet will be removed to the Peabody Museum when it is built; a fund of $150,000 having been given for this purpose by Geo. Peabody, Esq., of London.)
5. Apparatus in Physics and Chemistry adapted to and employed in public lectures.
6. The Collections of the Yale School of the Fine Arts, including the well known "Jarves collection" of early Italian paintings.
7. Gymnasium for physical training.

Classification of the Students.

The pupils of the scientific school are thus classified:

1. Those who are pursuing a systematic and prescribed course of study, extending through three years, and leading to the degree of Bachelor of Philosophy;

2. Those who have already been admitted to the degree of Bachelor of Philosophy, Science, or Arts, and are pursuing an ad

vanced course of study leading to the degree of Doctor of Philosophy, or in some cases to the degree of Civil Engineer;

3. Special students, who have already made a certain degree of proficiency in some department of science, and are now pursuing special scientific studies under the personal direction of some of the professors.

Degrees.

The degrees below named are conferred by the Corporption of Yale College on students who have passed the required examinations at the close of their course, and are recommended as candidates by the Governing Board of the School:

1. Bachelor of Philosophy, conferred at the termination of three years' study in any one of the several sections of the School;

2. Doctor of Philosophy, conferred on those who have already been admitted to the degree of Bachelor in Philosophy, Science, or Arts (in this or any other college), and who have successfully pursued in this college a higher course of study,—when the Baccalaureate degree does not indicate an acquaintance with the Latin and Greek languages, the candidate being required to show some proficiency in these studies;

3. Civil Engineer, conferred on students of the engineering section who have already taken the degree of Ph.B., and subsequently pursue with success the higher course of engineering.

4. In addition to the diploma of the Corporation, the instructors will give, if requested to do so, a formal certificate stating how long the student has been a member of the institution, and in what department of study he is proficient.* This certificate will be awarded only to meritorious students, after a thorough examination, and will be considered as the personal recommendation of the professors who sign it.

Conditions of Admission; and of Graduation.

All applicants for admission must be not less than sixteen years of age, and must bring satisfactory testimonials of good character.

1. TO THE REGULAR THREE-YEAR COURSES AS CANDIDATES FOR THE DEGREE OF PH.B.

Students desiring to go through any one of the prescribed three-year courses of the school, as candidates for the degree of Bachelor of Philosophy, must sustain an examination in the following books, or their equivalents:

Algebra—Davies, as far as General Theory of Equations. *Geometry*—Davies's Legendre.* *Plane Trigonometry*, including Analytical Trigonometry—Loomis or Davies. *The Elements of Natural Philosophy. Arithmetic* (including the Metric system of weights and measures). *English Grammar*, *Geography*, *and the History of the United States.*

Some acquaintance with the Latin language is regarded as essential to the most efficient progress in the studies of the school, and accordingly it will be made a subject for the preliminary examination after the examination of 1868. All who desire it can so readily secure instruction in this tongue that none should neglect to secure the advantages which come from its study. In the French and German classes great assistance will be derived from previous training in Latin,—while but little will be gained by the preliminary study of French and German, as every class at present begins with the rudiments of these languages. Latin is indispensable to the advanced students of Zoology and Botany, and is important in understanding the nomenclature of all departments of science.

In consequence of the incomplete preparation of many of the candidates, it is proper to say that the examination for admission is strict and full. As the studies above named are not pursued in the school, and are essential to successful progress, no one can be received as a scholar who is not well acquainted with these branches.

Candidates for advanced standing in the three-year courses are examined, in addition to the preparatory studies, in those already pursued by the class they propose to enter. Any person admitted to this advanced standing, unless coming from another college, pays the sum of ten dollars as tuition money for each term which has been completed by the class which he enters. No one can be admitted as a candidate for a degree after the commencement of the last year of the course. A graduating thesis is required at the close of this course from all candidates for the degree.

2. TO SPECIAL COURSES.

Students who are not candidates for a degree, and who propose to pursue some special department of study, are not required to pass an examination for admission; but are expected to furnish the Professor with whom they are enrolled, satisfactory evidence of their capacity to profit by the proposed instruction.

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* Playfair's Euclid is *not* accepted as an equivalent.

For pursuing special courses of study in the various branches of practical chemistry, including Metallurgy, the Analytical Laboratory affords convenient facilities. In Zoology also and other branches of natural history special students can be conveniently received. Instruction will likewise be given in Practical Astronomy and the use of the instruments. But there is no opportunity in this institution for young men to select, in an aimless manner, here a little and there a little, from the instructions which are provided. Those who determine to pursue the Select Course, laid down in the programme, are expected to give their attention to all its studies.

3. TO HIGHER COURSES, AS CANDIDATES FOR THE DOCTORATE OF PHILOSOPHY.

Graduates of this or of other colleges who may desire to receive the degree of Doctor of Philosophy, are required to remain in New Haven, during at least two academic years after receiving their first degree, during which they must engage faithfully in a course of study selected, with the approval of the Faculty, from branches pursued in the department of Philosophy and the Arts. The selection may be made from the studies of either or both Sections, but must belong to at least two distinct departments of learning. At the close of the course the candidate must pass a satisfactory examination, and present a thesis giving evidence of high attainment in the studies to which he has attended.

All persons, who have not previously received a degree furnishing evidence of acquaintance with the Latin and Greek languages, will be reqnired, before presenting themselves for the final examination for the Doctor's degree, to pass a satisfactory examination in these languages, or in such other studies (not included in their advanced course) as shall be accepted as an equivalent by the Faculty.

Time of Admission.

The regular examinations for admission to the Scientific School take place at Sheffield Hall, on the Tuesday preceding "Commencement," at 9 o'clock, A. M., and eight weeks later, on that Wednesday in September on which the fall term begins—that is, in 1868, July 21 and Sept. 16. Opportunity for private examination may, in exceptional cases only, be given at other times.

Terms and Vacations.

The College "Commencement" is held on the last Thursday but one in July of each year. The first term begins eight weeks from the day before Commencement and continues fourteen weeks; the second begins on the first Wednesday in January and continues fourteen weeks; the third, of twelve weeks, begins, this Collegiate year, on the last Wednesday in April and continues till Commencement. The intervening periods, of eight, two, and two weeks, are assigned for vacations.

The graduating exercises of the Scientific School take place on the Monday (July 20, 1868) before the public Commencement.

Tuition.

The charge for tuition is $125 per year, payable $45 at the beginning of the first and of the second term, and $35 at the beginning of the third term. The special student of Chemistry also pays the additional charge of seventy-five dollars per annnm for chemicals, and for use of apparatus. He will also supply himself at his own expense with gas, flasks, crucibles, &c., the cost of which should not exceed five or ten dollars per term.

The fee for graduation as Bachelor of Philosophy, including the charges for Triennial Catalogues, College Dinners, etc., is ten dollars.

Lectures.

Annual courses of lectures are given on the following topics:

FIRST TERM.

On Metallurgy, by Prof. BRUSH.
On Mining, by Prof. ROCKWELL.
On Practical Agriculture, by Prof. BREWER.
On Agricultural Chemistry and Physiology, by Prof. JOHNSON.
On the History of Language and Linguistic Ethnology, by Prof. WHITNEY.
On Entomology, by Prof. VERRILL.

SECOND TERM.

On the Strength of Materials, by Prof. NORTON.
On Metallurgy (continued), by Prof. BRUSH.
On Mining (continued), by Prof. ROCKWELL.
On Practical Agriculture (continued), by Prof. BREWER.
On Agricultural Chemistry and Physiology (continued), by Prof. JOHNSON.
On Botany, by Prof. EATON.
On Structural and Systematic Zoology, by Prof. VERRILL.

On the History of Language and Linguistic Ethnology (continued), by Prof. WHITNEY.
On Physical Geography, by Prof. GILMAN.
On Military Science and Tactics, by Gen. A. VON STEINWEHR.
On the Principles of Mechanism, by Prof. LYMAN.

THIRD TERM.

On Systematic Mineralogy, by Prof. BRUSH.
On Economic Mineralogy and Petrology, by Prof. BRUSH.
On Rural Economy and Farm Management, by Prof. BREWER.
On Structural and Systematic Zoology (continued), by Prof. VERRILL.
On the Steam Engine, by Prof. LYMAN.

Examinations.

Oral examinations are held at the close of every term on the studies of the term, and written examinations are held every year on the studies of the year.

COURSES OF STUDY.

FOR THE DEGREE OF BACHELOR OF PHILOSOPHY.

All who are candidates for the degree of Bachelor of Philosophy are expected to pass through the same course of instruction in the first year of their connection with the institution, unless they are admitted on examination to an advanced standing. The studies of Freshman year are those which are regarded as an important basis for all the higher instructions of the school. This introductory course includes a continuance of the mathematical studies required for admission, the general elements of Chemistry and Physics, the commencement of German, practice in English composition and Elocution, Surveying and Drawing,—as will be seen in the following outline. Near the close of Freshman year, every student is required to announce his selection of one of the seven higher courses of study,—and he is not allowed to change after the beginning of the second or Junior year without permission specially granted by the Governing Board.

Freshman Year.

INTRODUCTORY TO ALL THE SECTIONS OF THE SCHOOL.

FIRST TERM.

Mathematics—Davies's Analytical Geometry. Spherical Trigonometry. Surveying. *Physics*—Silliman's Principles. *English Language*—Exercises in Composition. *Chemistry*—Recitations and Lectures. *German*—Woodbury's Method and Reader.

SECOND TERM.

English—Rhetoric. Practical Exercises in Elocution. *German*—Woodbury continued. Selections from approved authors. *Physics*—Silliman's Principles and Academical Lectures. *Chemistry*—Recitations and Lectures. *Mathematics*—Descriptive Geometry and Geometrical Drawing.

THIRD TERM.

English—Exercises in Composition. *German*—Selections. *Physics*—Silliman's Principles and Academical Lectures. *Chemistry*. *Mathematics*—Principles of Perspective. *Botany*—Gray's Manual. *Drawing*—Free Hand practice.

Junior and Senior Years.

During the last two years of the course the students are instructed in separate sections, the particular arrangements of which may be found below. Each section is under the charge of special professors, with the exception of the Select Course, which is under the general charge of the Governing Board. To a considerable extent the students of the several sections recite together. The study of French is commenced in the Junior year, and is required of all the students.

I. CHEMISTRY AND MINERALOGY.

[Under the direction of Professors JOHNSON and BRUSH; Chemical Laboratory, Sheffield Hall, West Wing.]

The Sheffield Laboratory is fitted up in a complete and convenient manner, is provided with all the requisite apparatus and instruments of research, possesses a considerable collection of chemical preparations, and a consulting Library of the best treatises on Chemistry and the Chemical arts. It affords facilities for instruction in the various branches of theoretical and practical Chemistry.

Theoretical and Descriptive Chemistry are taught throughout the whole of the Junior year by lectures and by recitation,—Eliot and Storer's Manual and Miller's Elements being employed as textbooks. The lectures of Professor Silliman to the Academical and Medical Classes are also accessible to the Senior students. Every autumn term a class recites from Fresenius's Qualitative Analysis. Extended courses of Lectures on Agricultural and Metallurgical Chemistry are given yearly.

Mineralogy is taught in the Junior Year by lectures, which are fully illustrated with hand specimens and models, and by weekly exercises throughout the Senior Year in the identification of minerals from physical and chemical characters.

The Laboratory is open for Chemical Practice seven hours daily, except on Saturday, when it is closed in the afternoon. The student repeats a large number of experiments from Eliot and Storer's Manual, and works through a course of qualitative and quantitative analysis, which is varied according to his capacity and the object he has in view. Each pupil proceeds by himself independently of the others, under the constant guidance of the Instructors.

In connection with the department of Mining and Metallurgy, especial attention is given to assaying and the investigation of ores and furnace products. The student in Agriculture has opportunity to acquaint himself with the modes of research employed in agricultural chemistry. The applications of the science to other branches of industry are taught as occasion requires.

The systematic course likewise includes instruction in Zoology, Botany, Geology, and the French and German languages, as will be seen from the following programme:

Freshman Year (see page 53).

Junior Year.

Inorganic Chemistry—Eliot & Storer's Manual, Recitations and Lectures. *Analytical Chemistry*—Fresenius. Recitations and Lectures. *Laboratory Practice*—Repetition of Experiments from Eliot & Storer's Manual. Systematic Qualitative Analysis. Use of the Blowpipe. Quantitative Analysis. *Mineralogy*—Dana's System, Lectures and Practical Exercises. *Botany*—Gray's Manual, Excursions and Preparation of Herbarium. *Zoology*—Lectures and Excursions. *French and German* (see Select Course).

Senior Year.

General Chemistry—Academical and Medical Lectures. *Agricultural Chemistry and Physiology*—Lectures. *Laboratory Practice*—Quantitative Mineral Analysis. Assaying. Organic Analysis. Special Investigations for Graduating Thesis. *Mineralogy*—Identification of Species. *Metallurgy*—Lectures. *Geology*—Dana's Manual. Recitations and Academical Lectures. *Human Anatomy and Physiology*—Academical Lectures. *Mechanics, Steam Engine, aud other Prime Motors*—Lectures. *French* (see Select Course).

To advanced students, whether belonging to the regular classes or not, who desire to give attention to particular branches of chemistry, or to pursue original investigations, every facility is accorded.

The private libraries of the professors, containing the chemical journals and the recent foreign literature of chemistry and mineralogy, the large collections of ores, furnace products, &c., belonging to the School, and the extensive private cabinet of the Professor of Mineralogy, are freely used as aids in instruction.

II. CIVIL ENGINEERING.

[Under the direction of Professor NORTON.]

The special course in Civil Engineering comprises theoretical and practical studies, and exercises in field operations and in drawing. It is designed, in connection with the studies of the first year, to secure, in addition to a thorough mathematical training, the knowledge of practical science essential to success in the profession of Engineering; and includes the careful study of the applications of Mathematics, Mechanics, Physics, Chemistry, &c., to Engineering, the use of Surveying and Engineering Instruments, and an extended course of practice in Field operations and in Drawing. The student is also enabled to acquire a sufficient knowledge of French and German to make himself acquainted with professional works published in these languages.

The following is the programme of the course of study:

Freshman Year (see page 53).

Junior Year.

Mathematics—Descriptive Geometry, with applications. Shades, Shadows, and Linear Perspective. Analytical Geometry of three dimensions. Differential and Integral Calculus. *Astronomy*—Theoretical Astronomy. Practical Problems. *French and German. Practical Surveying*—Triangulation, Survey of a Harbor, &c. Topographical Surveying. *Drawing*—Isometrical, Topographical, Mechanical.

Senior Year.

Mechanics—Theoretical Mechanics. Applications of Calculus to Mechanics. Mechanics applied to Engineering. Principles of Mechanism. Thermodynamics. Theory of Steam Engine. Prime Movers. *Civil Engineering*—Strength and Stiffness of Materials. Bridge Construction. Stability of Arches. Stone-cutting, with graphical problems. Constitution and properties of Building Materials. Civil Engineering proper, or the Science of Construction. *Geology. French*—Selections. *Field Engineering and Surveying*—Location of Roads. Laying out Curves. Geodesy. *Designing*—Designing of Bridges and other Structures. *Drawing*—Architectural and Structural.

The Department is furnished with a full set of instruments for Surveying and Field Engineering, and with a large collection of illustrative models.

Higher Course of Engineering.—The student in this department who, on the completion of the three years' course, has taken the degree of Bachelor of Philosophy, has the opportunity of pursuing a higher course, designed to give a special training, preparatory to professional practice. This includes, together with higher theoretical studies, Practical Astronomy, with exercises in astronomical observations with the Transit Instrument, Meridian Circle, Zenith Telescope and Sextant; and a course of exercises in the designing of structures. At the completion of this higher course the degree of Civil Engineer is conferred upon examination, and upon sufficient evidence being given of the ability of the student to design important structures, and make the requisite drawings, calculations, and estimates.

III. MECHANICAL ENGINEERING.

[Under the direction of Professor Lyman.]

This section is closely connected with that of Civil Engineering, and many of the studies embraced in it are common to both. Prominence is necessarily given to the Mathematics and their applications, and to Mechanical Drawing, as lying, the one, at the foundation of all thorough theoretical training, the other, at that of professional practice. With these are joined other branches of science and modern languages, in order to secure both mental discipline and a better mastery of the special studies of the course.

The main object of the course is, by training the student in "such branches of learning as are related to the mechanic arts," to qualify him, as a mechanical engineer, for contributing toward the more efficient prosecution of these arts his services in the superintendence, construction, designing, or invention of machinery, in the management of mills or other mechanical works, or in the many other ways that lie within the scope of his profession.

It is not, of course, to be expected that the student will leave the institution with a full practical knowledge of the details of his professional work. The inculcation of the principles is the leading object. And yet, it is intended to bring the theory into as close relations with practice, as circumstances and the time allotted to the course will allow. To this end, practice in the use of tools is secured, for students needing it, in first-class machine shops in the city, to such extent as may be required. There is, as yet, for want of the necessary means, no shop for mechanical practice connected with the School.

PROGRAMME OF STUDIES.

Freshman Year (see page 53).

Junior Year.

French and German (see Select Course). Descriptive Geometry with Applications. Analytical Geometry of Three Dimensions. Elementary Mechanics. Principles of Mechanism. Differential and Integral Calculus. Metallurgy. Shades, Shadows, and Linear Perspective. Isometrical Projection. Elements of Mechanical Drawing and Principles of Construction. Shading and Tinting, and drawing from patterns.

Senior Year.

French and German (see Select Course.) *Analytical Mechanics*—Strength of Materials. Thermo-dynamics. Theory and Construction of the Steam Engine. Prime Movers. Theory of Machines. Mill work. Examination of Machinery. Mechanical Construction. Machine-shop Practice. Architectural Drawing. Drawing from actual Machines. Designs of Machines.

IV. MINING AND METALLURGY.

[Under the direction of Professors Brush and Rockwell.]

Although this section of the school has been but recently organized, instruction preparatory to mining and metallurgical pursuits has been given in the school since 1857. The Freshman year is the same as in the other courses (see page 53). The Junior year is devoted to special subjects included under Engineering and Mechanics, to Geology, and the French and German languages. The Senior year is occupied with Mining and Metallurgy, and laboratory practice in Chemical Analysis, including Assaying, the determination of the character and value of ores and furnace products, and the discrimination of minerals. Drawing is continued through both years. The lectures on Mining will discuss in detail known facts in regard to Ore Deposits—strata, beds, veins or lodes, stockworks or other irregular masses; Dislocations—faults, and other irregularities; Methods of search; Boring of different kinds with the various apparatus; Tools used in various kinds of mining and in different countries; Blasting; Sinking of shafts; Driving of Levels and Galleries; Timbering, Masonry and Tubbing for securing underground openings; Exploitation, or the opening out of mines and the working away of veins and strata; Transportation underground; Winding or raising the minerals to the surface, and machinery and apparatus; Pumps and Pumping Engines; Ventilation, its principles and practice, natural and artificial, by furnaces and machines; Lighting—safety lamps; Mechanical Preparation of Ores, etc.

The lectures in Metallurgy will be divided into: (1.) *General Metallurgy*, including the physical and chemical properties of the metals and their ores, and of slags and other furnace products, the different methods used in both the dry and wet way in the extraction of metals; the character and effect of the different kinds of fuel; the materials employed in the construction of furnaces, crucibles, etc.; the details in regard to different forms of furnaces, blast, etc. Under (2) *Special Metallurgy*, each metal will be considered by itself, its physical and chemical characters given in detail, with the characteristics of its ores, the methods for their assay, and the metallurgical processes employed for the extraction of the metal or metallic compound.

In extension of the present course it is proposed to add at least one year for a higher course, analogous to the higher course in Civil Engineering; this will include four to six months' practice in the field in the study of mines and smelting works, to be followed by special Engineering or Chemical studies as applied to Mining and Metallurgy.

PROGRAMME OF STUDIES.

Freshman Year (see page 53).

Junior Year.

French and German (see Select Course). *Mechanics*—Peck's Elements. Principles of Mechanism. Theory of Steam Engine. *Mathematics*—Hydraulics *Civil Engineering*—Strength of Materials. Mining and Topographical Surveying. *Geology*—Dana. *Drawing*—Mechanical and Topographical.

Senior Year.

French (see Select Course). *Mining*—Lectures. *General and Special Metallurgy*—Lectures. *General Chemistry*—Miller. *Chemical Analysis*—Fresenius. Recitations and Lectures. *Laboratory Practice*—Qualitative and Quantitative Analysis. Use of the Blowpipe. Assaying. *Mineralogy*—Lectures and Practical Exercises. *Zoology*—Lectures. *Mechanics*—Application to Engineering. *Drawing.*

V. COURSE IN AGRICULTURE.

[Under the direction of Professors Brewer and Johnson.]

This course is intended to prepare the student for the successfu management of a farm, by putting him in possession of a knowledge of the most approved methods of culture at present employed, and by explaining, so far as the state of learning admits, the reasons for these methods.

It is not expected to give a young man that familiarity with the mechanical operations of husbandry or that business capacity which is essential to the good farmer. These can only be acquired by assuming or sharing the care of a farm.

The course is in consequence adapted to those who are already familiar with rural affairs. Those who are practically ignorant of the varied details of farm practice can scarcely learn them thoroughly in an agricultural school, nor can they profit fully by the lessons proper to such an institution.

The main features of the course are, in addition to the mathematical and other studies of the first year, extended instruction by lecture in the Theory and Practice of Agriculture in all its branches; instruction in the French and German languages, in the accessory sciences, Chemistry, Botany, Zoology, Geology, Meteorology, and training in free-hand Drawing and experimental Chemistry.

Opportunities are offered for more particular attention to special branches, such as Horticulture, Forestry, &c., or to any of the sciences taught in the course, in their more detailed or specific applications.

In addition to the above brief programme, other topics of special interest and application in agricultural pursuits receive attention.

Excursions under the direction of the professors will teach the methods of out-door observation of natural objects, especially plants and insects useful or injurious to the farmer, as well as furnish illustrations of farming operations.

Shorter Course.—For the accommodation of those who do not wish to pursue the entire course, the lectures are so arranged, that those upon the subjects of more immediate practical use, are delivered during the Fall and Winter terms. These embrace Agricultural Chemistry, Practical Agriculture, Stock Breeding and Agricultural Zoology. The lectures in the other departments are also accessible to such students. Those who desire can thus attend during seven months of the year such a selection from the studies of the full course as will occupy their time profitably. For such admission to these lectures no examination is required, but testimonials of good character and the ability to profit by the instruction must be presented.

PROGRAMME OF STUDIES.

Freshman Year (see page 53).

Junior Year.

Agricultural Chemistry and Physiology—Structure and Physiology of Plants; Water, Atmosphere and Soil in their relations to Vegetable Production; Improvement of the Soil by Chemical and Mechanical means. Domestic Animals: the chemical relations of their Food, Digestion, Respiration, Assimilation and Excretion; Milk, Butter, Cheese, Flesh, and Wool as Agricultural products. Lectures. *Experimental and Analytical Chemistry*—Laboratory practice. *Meteorology*—Academical Lectures. *Physical Geography*—Lectures. *Zoology*—Lectures. *Drawing*—Free-hand practice. *French and German*—continued. *Excursions*—Botanical, Zoological, etc.

Senior Year.

Agriculture—The staple crops of the United States, their varieties, cultivation, management, and preparation for market. The Care, Breeding and Raising of Domestic Animals. Lectures and Recitations. *Experimental Chemistry*—Laboratory practice—*Agricultural Zoology*—Natural History of Domestic Animals; Insects useful and injurious to Vegetation. Lectures. *Human Anatomy and Physiology*—Lectures. *Geology*—Lectures and Recitations. *Rural Economy*, both American and foreign. Lectures. *French and German*—continued. *Excursions*—Botanical, Zoological, etc.

VI. COURSE IN NATURAL HISTORY AND GEOLOGY.

[Under the direction of Professors Eaton, Verrill and Marsh; Laboratory in Zoology, Trumbull Gallery.]

Students in this department, who are candidates for a degree, are required to complete the regular course of studies during the Freshman year. A knowledge of Latin and Greek is also very desirable.

Students not candidates for a degree may have special courses arranged for them by the Instructors from the studies of the Junior and Senior years, or additional thereto, if desirable.

The instruction in Zoology includes,

First—Courses of Lectures during the second and third terms of the Junior year, on Structural and Systematic Zoology; and during the first term of the Senior year, on general and applied Entomology and other special subjects, such as Embryology, Geographical distribution, Nomenclature, &c.

Second—Direct practical instruction to special zoological and geological students, in the Zoological Laboratory, where they are taught to prepare and arrange collections of various animals and fossils, and by making critical identifications, to become acquainted with scientific literature, and to make dissections in studying comparative anatomy and embryology. They are also, when sufficiently advanced, encouraged to make original investigations. For these purposes specimens, both recent and fossil, belonging to the College Museum, are made use of as may be required.

Third—Zoological Excursions in connection with the lectures are instituted during the spring and autumn, to afford the students opportunities to collect and observe the habits of both land and marine animals, including those that live only in deep water, and are obtained by dredging. By these excursions several thousand specimens have been added to the College Museum during the past two years, in addition to those retained by some of the students for private collections.

PROGRAMME OF STUDIES.

Freshman Year (see page 53).

Junior Year.

FIRST TERM.

Zoology—Daily Laboratory instruction; Zoological Excursions. *Botany*—Gray's First Lessons. *Chemistry*—Academical Lectures. *French and German*—Selections.

SECOND TERM.

Zoology and Paleontology—Laboratory Practice, Lectures. *Physical Geography*—Lectures and Recitations. *Chemistry*—Laboratory Practice. *French and German*—continued.

THIRD TERM.

Zoology and Paleontology—Laboratory Practice, Lectures, Excursions (land and marine). *Botany*—Gray's Manual; Excursions. *Mineralogy*—Dana, Lectures and Practical Exercises. *French*—continued. *Drawing*—Free-hand Practice.

Senior Year.

FIRST TERM.

Zoology and Paleontology—Laboratory Practice; Lectures, Excursions. *Geology*—Dana's Manual, Excursions. *Meteorology*—Academical Lectures. *French*—Selections.

SECOND TERM.

Zoology and Paleontology—continued. *Botany*—Lectures on special subjects. *Geology*—Dana, Recitations and Lectures. *Anatomy and Physiology*—Academical Lectures. *French*—Selections.

THIRD TERM.

Zoology and Paleontology—continued, with Excursions. *Photography*—Practical Instruction. *Preparation of Thesis. Examinations* in the studies of the course.

The Zoological and Geological Museum, which is accessible to all students, is already extensive, and amply sufficient to afford materials for the most advanced studies, as well as for the illustration of lectures.

The College Library, the Scientific School Library, and the private libraries of the Instructors contain a large number of works required for the more advanced studies in this Department, which students are allowed to use in the most liberal manner.

A large number of valuable diagrams have been prepared to illustrate the Zoological Lectures, and the microscopes and other instruments belonging to the Instructors are freely used for the same purpose.

The large private herbaria and botanical libraries belonging to the Instructors are open to the use of students, to whatever extent they may be needed, thus enabling the more advanced students to prosecute their studies to great advantage.

VII. SELECT COURSE IN SCIENCE AND LITERATURE.

[Under the direction of the Governing Board.]

The Select Course has been arranged to meet the wants of those young men who desire an education based chiefly on mathematical and physical science, and the modern languages, and who are not disposed to pursue either of the special courses already enumerated. The Freshman year is the same as in the other departments of the school. In the second and third years the scholars are trained in a selection from the studies prescribed for the other sections, and they also attend the lectures of President WOOLSEY and some of the other instructors of the academical department, and recite in text-books which illustrate these lectures.

As it is designed to make this course a valuable means of preparation for advanced scientific studies, it is hoped that especially the younger students who may avail themselves of its advantages will do so with the intention of going forward to pursue still higher branches of learning. Students who enter upon the higher studies taught in the school, having that acquaintance with French and German, the mathematics, and the natural sciences, which may be secured by an attendance upon the Select Course, will pursue their special professional studies with peculiar advantages.

PROGRAMME OF STUDIES.

Freshman Year (see page 53).

Junior Year.

MODERN LANGUAGES.—*French and German*—continued. English Composition and Literature.

MATHEMATICS.—Peck's Mechanics, Norton's Astronomy.

NATURAL SCIENCE.—*Agricultural Chemistry*—Lectures. *Zoology*—Lectures and Excursions. *Botany*—Lectures and Excursions. *Mineralogy*—Lectures. *Physical Geography*—Lectures and recitations.

HISTORY.—Recitations.

DRAWING.—Free-hand and Architectural.

Senior Year.

LANGUAGE.—*French or German*—continued. Lectures on Language and Linguistic Ethnology. Compositions.

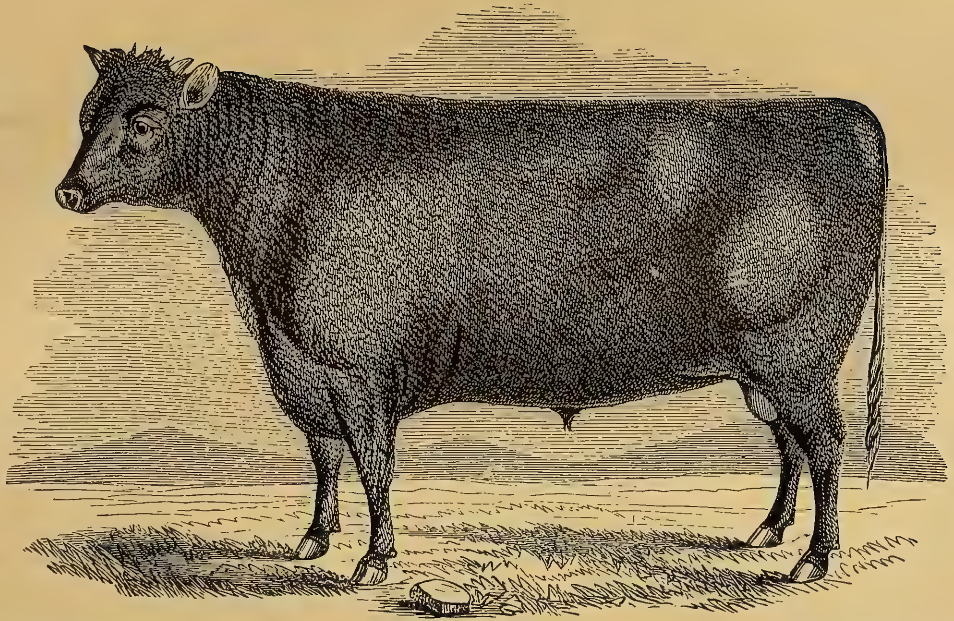
NATURAL SCIENCE.—*Botany and Zoology*—continued. *Geology*—Recitations and Lectures. *Meteorology*—Lectures. *Human Anatomy and Physiology*—Lectures. *Astronomy*—Lectures.

PHILOSOPHY AND HISTORY.—Lectures and recitations, in *History and Political Philosophy*, *International Law*, *Political Economy*, *Ethics and Metaphysics.*

Preparation of a graduating thesis.

HIGHER AND PARTIAL COURSES.

Students are received to higher and partial courses by special arrangement with the professors in the departments in which they are interested. (See pp. 50–51.)



Devon Bull "GENERAL LYON," at 8 mos. of age; Calved June 25th, 1867. Bred and owned by E. H. Hyde, of Stafford, Conn.

Winner of sweepstakes Medal at the New England Agricultural Fair at Providence, R. I., Sept., 1867, as the best Devon Bull of any age; competition open to the United States and Canadas; also the first prize as the best bull calf on exhibition. Also the first prize at the Hartford Co. Agricultural Fair at Hartford, 1867; competition open to the State. Sire, Devoni out of Devonia, (1925).

Dam, Fairy 9th, 101, winner of the sweepstakes medal at the New England Agricultural Fair at Providence, R. I., Sept., 1867.

SECOND ANNUAL REPORT

OF THE

SECRETARY

OF THE

Connecticut Board of Agriculture.

1867.

Printed by order of the Legislature.

HARTFORD:
CASE, LOCKWOOD & BRAINARD, PRINTERS.
1868.

STATE BOARD OF AGRICULTURE.

PRESIDENT.

HIS EXCELLENCY JAMES E. ENGLISH.

VICE PRESIDENT.

Hon. E. H. HYDE.

SECRETARY.

T. S. GOLD, West Cornwall.

APPOINTED BY THE GOVERNOR AND SENATE.

E. H. HYDE, Stafford.
H. S. COLLINS, Collinsville.
Prof. S. W. JOHNSON, New Haven.
H. L. STEWART, Midddle Haddam.

CHOSEN BY THE COUNTY SOCIETIES.

Hartford	County,	D. H. WILLARD, Newington.
New Haven	"	ANDREW BARNES, East Haven.
New London	"	JOHN BREWSTER, Ledyard.
Fairfield	"	B. B. PLUMB, Trumbull.
Windham	"	RALPH W. ROBINSON, Hampton.
Litchfield	"	J. D. PERKINS, Litchfield.
Middlesex	"	P. M. AUGUR, Middlefield.
Tolland	"	J. S. YEOMANS, Columbia.

REPORT.

To the General Assembly of the State of Connecticut:

The Annual meeting of the State Board of Agriculture, was held at the United States Hotel, in Hartford, June 4th, 1867, at 10 A. M., Hon. E. H. Hyde, Vice President in the chair.

The Secretary presented a report of the January meeting, which was read and accepted.

The Secretary reported the progress made by the printers on the Annual Report, also the expenditures of the Board for the year.

The Board then proceeded to the choice of officers for the year ensuing.

President,	His Excellency JAMES E. ENGLISH.
Vice President,	Hon. E. H. HYDE.
Secretary,	T. S. GOLD.

In the absence of Mr. Hyde, Mr. Perkins was called to the chair.

On motion—Hartford was designated as the place for the next regular meeting, in January, 1868.

After an explanation by the committee on publishing the report it was voted:

That the Secretary be directed to compensate Professors Johnson and Brewer for services in lecturing and preparing their lectures for the press in a sum not to exceed two hundred dollars.

The Secretary was directed to prepare a draft for an act for the protection of Agricultural Exhibitions against sale of provisions and liquors and all outside exhibitions.

The Board then adjourned till 2 P. M.

The Board met according to adjournment, at 2 P. M.

The Secretary reported an act in two sections for the protection of Agricultural Fairs, which he was directed to present to the committee of the Legislature on Agriculture.

Prof. S. W. Johnson, H. S. Collins, Esq., and the Secretary were appointed a committee to prepare subjects and essays for the Winter Meeting.

The subject of "Neat Stock" was suggested by this committee, and accepted by the Board as the principal subject for discussion at the January meeting.

The Board as now constituted, consists of His Excellency James E. English.

Prof. S. W. Johnson, H. S. Collins, retiring in May, 1868.

Hon. E. H. Hyde, H. L. Stewart, retiring in 1869.

D. H. Willard, Newington, Hartford County, J. L. Yeomans, Columbia, Tolland County, Andrew Barnes, East Haven, New Haven County, Ralph W. Robinson, Hampton, Windham County, retire in 1868.

J. Brewster, Ledyard, New London County, P. M. Augur, Middlefield, Middlesex County, B. B. Plumb, Trumbull, Fairfield County, J. D. Perkins, Litchfield, Litchfield County, retire in 1869.

T. S. Gold, West Cornwall, Secretary.

All the members were present except Mr. Plumb. It is understood that when the President of a County Society, acts as member of the Board, his term as member of the Board expires when a new president is elected who takes his place in the Board.

The following members of the Board were appointed as delegates to visit the various county exhibitions and report to the Board.

Hartford County, Messrs Perkins & Stewart,
Hartford, October 1st, 2d, 3d and 4th.
Pequabuck, Oct. 9th, Bristol.

New Haven County, Messrs. Brewster & Augur.
Meriden, Oct. 9th, 10th.
Milford and Orange, Oct. 2d, 3d.
Oxford, Oct. 1st.
Guilford, Oct. 9th.

New London County, Mr. Robinson.
Norwich, Oct. 8th, 9th, 10th, 11th.

Fairfield County, Mr. Willard.
Norwalk, Sept. 24th, 25th, 26th, 27th.
Ridgefield, Oct. 1st, 2d, 3d.

Litchfield County, Messrs. Plumb & Collins.
Litchfield, Sept. 10th, 11th, 12th.
Union, Sept. 10th, 11th, 12th.
Woodbury, Sept. 24th, 25th.
Watertown, Sept. 18th, 19th.
Housatonic, Oct. 1st, 3d, New Milford.
Torrington, Oct. 2d, 3d, Wolcottville.

Middlesex County, Mr. Hyde.
Middletown, Oct. 15th, 16th, 17th, 18th.

Windham County, Mr. Yeomans.
Brooklyn, Sept. 24th, 25th, 26th.
Woodstock, Sept. 18th, 19th.

Tolland County, Mr. Barnes.
Rockville, Oct. 2d, 3d.

Adjourned till Wednesday morning, at 8 A. M.

The Board met at 8 A. M., Wednesday, June 5th, according to adjournment, Hon. E. H. Hyde in the chair.

On motion of Mr. Perkins, the following resolution was adopted:

Resolved, That the Secretary be directed to solicit early in April from the members of the Board, the names of members of the Senate and House, who are proper persons to be placed upon the committee of Agriculture, and communicate the same to the President of the Senate and Speaker of the House.

The Board then adjourned, *sine die.*

The Connecticut Board of Agriculture, met at the Trumbull House, in Hartford, January 14th, at 10 A. M., Lieut. Gov. E. H. Hyde in the chair.

The report of the annual meeting was read and accepted. The subject of retaining male animals was introduced and discussed by the Board. Mr. Augur was appointed a committee to prepare an act on this subject, to report to the Board to be presented to the consideration of the next Legislature.

The Secretary presented his report of his visits to the agricultural fairs in the state, which was read and accepted. There were present Messrs. Hyde, Collins, Willard, Yeomans, Stewart, Robinson, Brewster, Augur, Barnes, Plumb, and Gold.

During the sessions, the secretary presented letters from His Excellency the Governor, Prof. Johnson and Mr. Perkins offering their regrets that they were unable to be present at this meeting of the Board.

The Sscretary reported the action of the committee on essays and subjects for discussion, and submitted the following programme for the three day's session of the Board.

Programme of the meeting of the Connecticut State Board of Agriculture, Hartford, January 14, 15, *and* 16, 1868.

TUESDAY, JANUARY 14.—10 A. M., Business Meeting at the Trumbull House. 3 P. M. Lecture, "Laws of Reproduction in Cattle," Prof. A. E. Verrill. 7 P. M. Lecture 2d, "Laws of Reproduction in Cattle," Prof. A. E. Verrill.

WEDNESDAY, JANUARY 15.—9 A. M., Business meeting. 3 P. M. Lecture, "Parasitic Diseases that injure the flesh of Cattle for Food," Prof. Wm. H. Brewer. 7 P. M., Discussion, "Breeds of Cattle and Breeding."

THURSDAY, JANUARY 16.—9 A. M., Discussion,—"Dairy Husbandry. Feeding for milk or other purposes." 3 P. M., Lecture, Prof. Wm. H. Brewer. "The possibilities and Limits of Improvement in Breeds of Cattle." 7 P. M., General discussion on Neat Stock.

Business Meetings will be held at the Trumbull House; Lectures and Discussions at the Representative Hall. After the Lectures, opportunity will be given for discussions, and all interested are invited to attend.

The Board then adjourned to 3 P. M.

The Board met at the Rooms of the Young Men's Christian Association, at 3 P. M., to hear a lecture by Professor Verrill.

THE LAWS OF REPRODUCTION IN CATTLE.

An abstract of Two Lectures delivered by

PROF. A. E. VERRILL.

LECTURE I.

The subject of Reproduction has excited the curiosity and stimulated the investigation of mankind, for a longer time perhaps than any other subject connected with anatomy and physiology, yet it is, at the present day, one of the subjects that is generally least understood, notwithstanding the rapid advance that physiological science has made in recent times, due largely to the perfection of the modern microscope. It is, however, one of the most interesting subjects for investigation, and one that has most important practical applications, not only for farmers and stock-breeders, but for every intelligent person. For the same laws, or nearly the same, that govern this function in the lower animals hold good, also, in the human race.

Of all the animal functions, that of reproduction is the most uniform and constant throughout the Animal Kingdom, for even as all plants are reproduced by seeds or seed-like bodies, so are all animals, from man down to the lowest worms and polyps, reproduced by eggs.

The seeds of plants and the eggs of animals have this in common, that they are in all cases the combined product of two distinct organs, of opposite nature, known as male and female. These bisexual organs, in most plants and very many of the lowest animals, are found in the same individual, which may or may not be capable of self impregnation. But in most of the higher Radiates, Mollusks, Insects, and Crustacea, as well as in all animals having a back-bone, the opposite sexual organs are found in separate individuals. Whether combined in one individual or separated in two, the nature and functions of these organs and their products are nearly the same.

The essential and ever present female organs are the *ovaries*, which are destined to produce ovarian eggs or ovules.

The essential male organs are the testes, or *spermaries*, as they are often called in the lower animals, which are destined to produce *spermatozoa*.

It is only by the union of these two products that perfected eggs capable of developing into living young can be produced. Yet many of the lowest animals, as well as most plants, have additional or accessory modes of reproduction and multiplication, which are not sexual and not accompanied by eggs. Such are the curious processes of budding, self-division, and the like. But all must at some time return to the normal sexual modes, to which the other processes are subordinate.

An ovule or ovarian egg, in the higher animals and the human race, is a minute, somewhat transparent sphere, filled with oily and albuminous materials, known as the *vitellus* or yolk (fig. 1, b) and enclosing in its midst another still more minute spherical vesicle, called the *germinal vesicle* (fig. 1, c). This in its turn encloses one or more excessively small dots or *nuclei* (d), which under very high powers of the microscope sometimes appear to be vesicles in their turn. The vitellus or yolk, with its contents, is enclosed in a transparent covering called the *vitelline membrane* (fig. 1, a).

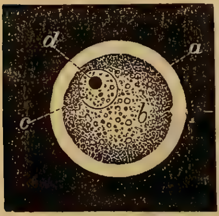


Figure 1.

Human Ovum, magnified 85 diameters. a, Vitelline membrane, b, Vitellus, c, Germinal vesicle, d, Nucleus. From Dalton.

In many of the lower animals only the germinal vesicle is present within the ovule, and therefore it is considered the most important part, as in fact its mode of origin seems to indicate, since in many animals, it is formed before the yolk, which afterwards surrounds it. Its contents are more highly albuminous than the yolk and less oily, and probably contribute some special materials for the formation of the germ.

The spermatozoa (or spermules) are variously shaped bodies, of soft consistency, and usually endowed with the power of moving actively about with a writhing or wriggling motion. In man and all other mammals (fig. 2.) they consist of a more or less enlarged, and usually oval and flattened portion, called the "head," which tapers off into a slender filament, usually called the "tail." These minute bodies differ greatly both in size and form in different animals, but do not bear any proportion to the size of the animal from which they come, those of a rat being as large as those of a horse. They are not to be considered, on account of moving, as having an independent life any more than has the ovule. To move is a part of their organic nature, and this they continue to do for many hours or even, in some cases, days and weeks, provided they are kept under natural circumstances.

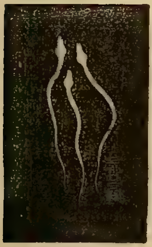


Figure 2.

Spermatozoa of man, magnified about 500 diameters.

This incessant motion increases greatly the chances of their coming in contact with the ova. In man their length is about $\frac{1}{600}$ of an inch; in the bull they are about four times as long; in the horse and ass a little smaller than in the bull, and in the ram still smaller.

They always consist of a semi-solid albuminous mass, having a homogeneous structure throughout, and never showing any cavity in the interior.

They are so excessively numerous that a drop of seminal fluid seen under the microscope seems to be a writhing mass of them.

They were first discovered nearly 200 years ago, and until quite recently have been thought by most writers to be peculiar animalcules, living parasitically in the seminal fluid, and from this view they derive their common name, *spermatozoa*, or sperm-animals. This opinion has, however, been shown to be entirely erroneous and has been abandoned by nearly all anatomists. Hence the term spermule, is preferable to that of "spermatozoa."

The reproductive process may be studied under the following divisions:

1st, Origin and development of the ovules, and spermules.

2d, The mode of union of these two products, or impregnation.

3d, The formation and growth of the resulting embryo.

4th, The Laws of Transmission of the peculiarities of the parents to the offspring.*

In order to understand the nature and origin of the sexual products it will be necessary to explain briefly the structure of the reproductive organs. In most of the fishes and amphibious reptiles and in very many of the invertebrate animals the reproductive organs consist only of the ovaries and spermaries and the ducts by which their products are discharged.

In such cases both the impregnation and the development of the embryo are effected externally to the body of the parent. In these cases the liabilty to loss by lack of impregnation or by accidental destruction, is provided against by the immense quantity of ova and spermules that such animals produce. The eggs often amounting to 20,000 or 50,000, as in some fishes. In Mammals, Birds, scaly Reptiles, Sharks, Insects, and many lower animals, there are such additional organs of various kinds as will allow the male product to be introduced within the female organs to meet the ova as they are discharged from the ovaries, and in this way fertilization is rendered more certain.

The mammalian animals are peculiar in having additional provisions for the development and nourishment of the embryo within the organs of the mother. This is effected by a dilation of the oviducts into a cavity, the uterus, in which the embryo is retained, and there receives nourishment during its development, from the mother's blood. Even after the young is born its farther nourishment is provided for by the secretion of milk from peculiar glands found in no other class of animals.

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*Since the last division of the subject was more particularly treated of by Prof. Brewer, it is omited from this Abstract.

The principal parts of the female reproductive organs in mammalia are:

1st, The Ovaries.

2d, The Oviducts or Fallopian tubes.

3d, The Uterus.

4th, The Vagina and external parts.

The ovaries produce the ova and discharge them spontaneously when mature. The Fallopian tubes receive them and carry them slowly to the uterus, and during this passage impregnation takes place, otherwise the ova are discharged and perish. The uterus receives and retains the impregnated ovum, and as it develops, enters into a peculiar indirect vascular connection with it, and when the fœtus becomes mature, expels it by muscular contractions. The vagina and external parts serve both for the discharge of the embryo and other products and the introduction of the seminal fluid within the uterus.

The principal male organs consist of:

1st, The Testes, corresponding to the ovaries.

2d, The Spermatic ducts, partially corresponding to the oviducts.

3d, The external Intromittent organ and accessory glands.

To trace the formation of the ova, we must go back to the time when the ovary itself was developing.

In the early stages of embryonic growth there is no apparent difference either in structure or position, between the testes and ovaries. The sexes cannot be distinguished in the human embryo before the third month, when the organs begin to differ. At birth or a little before, the ova begin to develop within the ovary in great numbers. They are then exceedingly minute. In the ovary of the cow it has been estimated that there may be 200,000,000 to the cubic inch. Their development is slow until near the time of puberty, when some of them rapidly increase in size, and when these are fully matured the animal is in a condition to become pregnant.

The ovary during infancy and youth has a nearly regular form and smooth surface, but at puberty becomes irregular from the protrusion of the vesicles containing mature ovules, and as these are successively matured and discharged it becomes more and more irregular and scarred.

The vesicles in which the ovules develop, called the Graafian vesicles, increase in size as the ovaries approach maturity and become distended with fluids. When an ovule is fully ripe the outer portion of the vesicle, which then protrudes from the surface of the ovary, spontaneously ruptures and the ovule escapes into the enlarged funnel shaped end of the Fallopian tube, which has previously bent itself around so as to firmly grasp the ovary at the spot from which the discharge of the ovule is to take place.

The number of ova developed at once is in proportion to the number of young commonly produced. In cattle there is ordinarily only one, but sometimes two or more, up to five. *The ripening* of ova is in all mammals more or less periodical, and is accompanied by congestion of the organs, and by a peculiarly excited condition of the nervous system known as "rut," "the heat," or "œstrus." In many wild animals, like the deer, this occurs but once annually, and it is coincident with a similar condition of fulness, and enlargement of the testes of the male, who is also, at the same time, in "heat." In such animals impregnation is only possible at this time, for at all other times there is not only no inclination for sexual union, but there are neither mature ova formed in the ovary, or spermules in the testes. But in most domestic animals the periods of ripening and discharging the ova occur more frequently, while the male organs contain mature spermules at nearly all times.

If access of the male be prevented when the ova are matured they are, after a short time, varying in different animals, but usually in a few days, spontaneously discharged by the rupture of the Graafian vesicles which enclose them, and passing to the uterus, without impregnation, very soon perish and disappear, while the heat passes away, usually before the ova reach the uterus. This spontaneous ripening and discharge of ova, without influence from the male, appears to be constant and natural among all animals, and is always coincident with the natural periods of reproduction. With the human race it occurs usually at intervals of about four weeks, and is to a certain extent coincident, though not entirely so, with the periods of menstruation, which appear to depend rather upon the ripening of ova than upon their discharge.

In cattle and other domestic animals, the periodical ripening of ova is less regular, but if impregnation be not effected at the first appearance of "the heat," after the birth of the young, it recurs several times at pretty regular periods. With the cow the intervals are about three or four weeks; with the mare two to four weeks, but the time varies in different breeds and in different countries.

The "heat" may, therefore be considered the *external* evidence that ova have been matured and are ready to be discharged, but the actual discharge of the ova may be delayed for some time if access of the male be prevented, or it may be considerably hastened by the attentions of the male, or even by his proximity, and far more so by the excitement of sexual congress. The heat may even be brought on several days sooner than it would otherwise occur by the persistent attentions of an active male.

In other words there is in the reproductive system a very considerable power of accommodation, or adaptation to various circumstances, so that it is impossible, in this respect, to lay down fixed and exact laws. This point may be illustrated more fully in the case of the human female, where the periods are most regular. It is a common, and probably to a considerable extent correct belief that impregnation is most likely to occur within a week or ten days after the monthly sickness, which may, in a healthy state of the system, be regarded as external evidence of the maturation of an ovum. But the ovum is not always, and perhaps not *usually*, discharged from the ovary for several days or even a week or more, after the sickness, unless the ovaries be stimulated by sexual excitement. While on the other hand, the discharge of a mature or nearly mature ovum, by the same cause may be, and doubtless often is, hastened several days or even a fortnight, before it would naturally occur. From these two causes it happens that impregnation of the human ovum *may* take place at any time during the intervals between the menses, and there are cases on record where it has occurred even at that time.

The testes of all mammals in the early stages of the embryo occupy the same position as the ovaries, near the kidneys, but afterwards descend, and in most species become enclosed in an external pouch. The structure, in all mammals, consists essentially of a large number of delicate and usually very long, blind tubes, which rarely branch or subdivide. These tubes are much convoluted and held together by a small amount of fibrous tissue, and each is surrounded by minute blood-vessels, so that by careful dissection they may be unraveled. The excretory duct is formed by the union of all these tubes and is at first convoluted, constituting the *epididymus*, and then passes toward the urethra, into the lower part of which it discharges its contents. Dilations of the ducts usually hold an accumulation of the spermatic fluid, which in its passage becomes mingled with and diluted by the secretions from several glands, which are to be regarded, however, merely as accessory organs.

The *essential* products formed in the male organs are the spermules, or spermatozoa. These originate in bundles within peculiar cells attached to the inside of the tubes of the testes, and are usually regarded as their metamorphosed nuclei. When mature they are discharged, still within their enclosing cells, and passing along the tubes gradually become liberated. In the sperm-tubes they are mixed with but very little other matters, the fluids for dilution being mingled with them afterwards.

Mode of Impregnation. Although, both in ancient and modern times, many and various theories of the manner in which the fertilization of the ova takes place, have been proposed, yet accurate observations with the microscope upon this phenomenon are of comparatively recent date. Therefore all the older and most of the modern theories have become useless and obsolete.

That *actual contact* of the spermatozoa with the contents of the ovule is the direct and only cause of impregnation is now generally admitted by physiologists, and has been demonstrated by direct observation in very many animals belonging to various classes.

The modes in which this contact is effected are various in the different classes of animals. In ordinary fishes, like the trout, the ovules are provided with very peculiar, minute, funnel-shaped openings in the outer membrane, through which the spermules enter in great numbers and, mingling with the contents of the yolk, soon disappear. The same is true in many insects, star-fishes, and mollusca. In the mammalia, however, no such openings have been observed, but spermules have been seen to enter in considerable numbers directly through the substance of the very soft and thin vitelline membrane, and thus mingle with the yolk.

Experiments made upon the eggs of frogs have shown that the completeness of fertilization is dependent, to some extent, upon the number of spermatozoa that enter the ovum, and that when very few entered the impregnation was incomplete, and the egg perished in the early stages of development. Yet owing to the excessive minuteness of these organisms and the immense number contained in even a small quantity of the seminal fluid, this difficulty is probably of rare occurrence, in the lower animals at least. In one experiment 2 grains of the spermatic fluid of a toad fertilized 113 eggs. In another, 5 grains were mixed with 18 ounces of water, the point of a needle dipped in the mixture and then touched for an instant to an egg served to fertilize it.

The fact that too few spermules effect only an imperfect vitalization of the ovum is, however, of great importance, when applied to the higher animals, and may account for many cases of early abortion. Imperfect or diseased spermules must of course produce a similar result, if impregnation be affected by them.

In mammals the contact of the spermules with the ovules is secured by the injection of the spermatic fluid into the uterus, from whence they are carried by the involuntary peristaltic movements of the oviducts and their own motions, to the point where they meet the descending ovum. It is probable that the ova are usually impregnated in the upper half of the oviducts, but there are good reasons for supposing that it may sometimes take place in any part of their length. In animals killed half an hour after coition, spermatozoa are often found in large numbers in the horns of the uterus and throughout the Fallopian tubes, even to the surface of the ovaries.

After the Lecture and a brief discussion, the Board adjourned to meet at 7 P. M., at the Superior Court Room.

The Board of Agriculture met at the Superior Court Room at 7 P. M., to hear the Second Lecture by Prof. A. E Verrill.

ON THE LAWS OF REPRODUCTION IN CATTLE.

LECTURE II.

Formation and Development of the Embryo. Immediately after the spermules enter the ovum and mingle with the yolk, peculiar changes begin to take place. The yolk shrinks away from its enclosing membrane, leaving a space between, on one side, which becomes filled with a transparent fluid, containing a few granules. Soon a groove begins to appear upon the yolk, which rapidly grows deeper and finally divides the yolk through the middle into two parts, (Fig. 3, a).

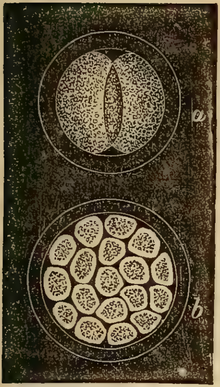

Figure 3.

Segmentation of the yolk in its early stages. From Dalton.

This is the beginning of the process called segmentation, which all impregnated ova undergo, preliminary to the formation of the germ. Soon each of the two divisions of the yolk divides in the same way into two more. Each of the four resulting spheres again divides into eight; and these again into sixteen; and so on until the whole yolk is divided up into an immense number of very small masses, which by mutual pressure assume polygonal shapes. During these changes the germinal vesicle disappears, and its contents, like those of the spermules, become blended with the whole mass of the yolk, which finally becomes a homogeneous mass of minute granules. Before the segmentation is completed the ovum usually reaches the uterus.

In some animals, as the deer, the ovum reaches the uterus with but little change and remains there in a nearly dormant state for over four months, when its development proceeds very rapidly. The ovum in most mammals, however, receives an outer coating secreted from the inner membrane of the Fallopian tubes, before it reaches the uterus.

Immediately after the impregnation of the ovum, changes begin to take place in the structure of the uterus, and proceed rapidly, so that by the time the fertilized ovum has descended, the uterus is in a proper condition to receive and retain it. The most noticeable change consists in a thickening of the inner membrane, which soon becomes covered with a thick, soft, velvet-like lining, rising in folds and convolutions, in which the blood-vessels have greatly increased in number and size. When the ovum enters the uterus, thus prepared for its reception, it very soon becomes lodged between some of the folds of the surface, and there retained, while the soft, membranous folds rapidly grow up around it on all sides until it becomes completely enclosed in a cavity within the thickness of the membrane, which is called the *decidua*, because it is eventually thrown off from the uterus with the embryo. Very soon after the ovum reaches the uterus and becomes fixed, minute filaments begin to spring from its outer membrane on all sides, which increase rapidly in number and size, and insinuate themselves into the minute folds and tubes of the *decidua*, and serve to imbibe nutriment from its fluids to supply materials for the development and growth of the embryo in its early stages, before the formation of the placenta, which takes place later.

The ovum, in the meantime, has completed the segmentation of its yolk, and from the resulting mass there is formed a layer of organized cells lining the inside of the vitelline membrane. This layer, known as the *blastodermic membrane*, soon separates into an inner and outer layer, in which the size of the cells is somewhat different, while within the inner layer the balance of the yolk is still liquid. The formation of the blastodermic membrane is in reality the first appearance of the embryo, in its most simple form.

The two layers of the *blastodermic membrane* are very different in nature and are destined to perform very different offices in the formation of the organs of the embryo. The upper or outer layer is more albuminous than the lower layer, and eventually gives rise to the brain, spinal column, muscular system, and skin, or *all the organs of animal life*. The lower layer produces the intestines and other viscera, and therefore gives rise to *the organs of vegetative life*, or those organs by which the nutrition and growth of the animal and the continuance of the race are provided for. Very soon the external layer begins to thicken upon one side of the ovum, and there may be seen upon its surface a longitudinal furrow know as the *primitive trace*. Then the substance of the membrane all around the *primitive trace* begins to thicken and swell up into a ridge, leaving a groove between, and this rising up goes on until the crest of the ridges, called the *dorsal plates*, rise above the primitive trace, and finally their summits meet and unite together over it, and thus enclose the groove as a longitudinal cavity, which, in the mean time, has become much wider at one end than the other.

In this cavity, called the *spinal canal*, the brain and spinal cord are afterwards formed, and the wide end becomes the head. At the same time the sides of the forming embryo grow rapidly and spread out in all directions over the yolk of the ovum as thickened membranes until they meet on the lowerside and unite, thus completely enclosing the remaining yolk, which is destined to be absorbed and furnish nourishment to the embryo. These membranes are often called the *abdominal plates.*

A slender cartilaginous cord appears very early beneath the longitudinal groove, which is the first formation of the backbone. This cord afterwards develops along its length the vertebræ comprising the backbone, from each of which four processes, at first cartilaginous, develop. One of these on each side, passes up in the membranes that have closed over the furrow or spinal canal, and one also passes down on each side in the abdominal membranes which have enclosed the yolk. The latter afterwards become the ribs, the former the upper processes of the vertebræ and the skull, which protect the spinal marrow and brain.

A section across an embryo at this time presents the structure seen in figure 4. Until about this period the development of all vertebrate animals, whether fishes, reptiles, birds, or mammals, proceeds in nearly the same manner. But as in fishes and amphibious reptiles the young embryo respires directly through the external membrane until hatched, there are no special organs formed for embryonic respiration. In scaly reptiles, birds and mammals, such respiration is sufficient only in the very early stages, and consequently by the time it has arrived at the stage represented in figure 4, special organs to provide for the respiration begin to appear. The ob-

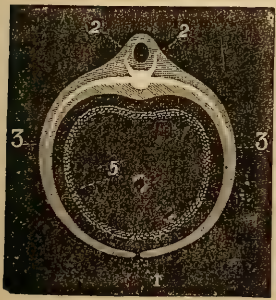

Figure 4.
Embryo at an early period. 1, Point of union of the abdominal plates. 2, Dorsal plates united on the median line and enclosing the spinal canal. 3, Abdominal plates. The white space shows the spinal column cut across, with its upper and lower processes. 5, Internal blastodermic membrane, enclosing yolk.

ject is to bring out to the surface of the egg a portion of the *internal* and more vascular blastodermic layer. This is brought about in a very singular manner.

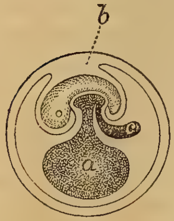

Figure 5.
Very young embryo. a, Remnant of yolk. b, Amniotic cavity not yet closed up. c, Allantois beginning to expand. From Dalton.

Soon after the embryo has increased somewhat by the thickening of the external blastodermic layer, a fold begins to rise up all around the body of the embryo, which then appears sunken in a depression. This double fold increases in height and bends up over the back of the embryo on both sides, and in front and behind, in a manner similar to the first fold that enclosed the spinal canal. As the fold begins to approach from opposite sides above the back, it encloses a space around the embryo, (Fig. 5, b). This space soon becomes a closed cavity by the meeting and union of the folds from all sides, above the middle of the back. The closed sac is called the *amnion*, and the fold that forms it the *amniotic fold*. The outer layer of this double fold separates from the inner, after it becomes closed up, and becomes intimately united to the outer or vitelline membrane of the ovum. The inner cavity or *amnion* becomes filled with a clear, thin liquid, in which the embryo floats. This liquid serves to protect the embryo from injury until the time of birth, when it is discharged by a rupture of the amniotic membrane.

While the formation of the amnion is going on, another organ is also developing, which serves most important functions. This appears first as a protrusion of a portion of the imperfectly formed intestine from the abdomen of the embryo, in the form of a hernia. This rapidly enlarges and elongates, and as it grows, extends out between the two layers of the amniotic fold, (Fig. 5, c). This is the commencement of the *allantois*. As it grows larger it has the form of a pouch, connected by a narrow neck to the embryo and filled with fluid. Reaching the outer membrane of the amniotic fold, its outer end flattens and spreads out around the inner surface of this membrane, until it surrounds and completely encloses the amnion and embryo, in a double membranous sac, (Fig. 6, 3). In the birds these two layers of the allantois remain more or less separated by the cavity, which contains fluid, and the outer layer, filled with blood-vessels, comes in contact with the inside of the shell on all sides; but in the human race, and all domestic animals, the two layers of the allantois unite together as they spread around the embryo, so that when complete, the allantois consists only of one compound membrane, except near its connection with embryo, where it is still hollow.

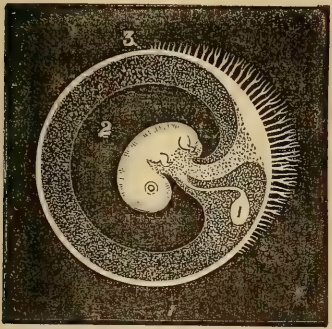

Figure 6.

Human embryo, with allantois fully formed. 1, Umbilical vesicle, containing last of the yolk. 2, Amnion. 3, Allantois, on which the fringes of the placenta are developing. From Dalton.

The *allantois* is therefore a part of the internal blastodermic layer which has been caused to emerge from the interior to the exterior of the ovum, in order to perform the special functions of respiration and nutrition.

The *amnion*, on the contrary, is a part of the external blastodermic layer, continuous with integument of the embryo, and is destitute of blood vessels. The allantois in birds and scaly reptiles imbibes oxygen directly from the air through the pores of the egg-shell, serving as a sort of external lung, for which its numberless, closely reticulated blood-vessels well adapt it, but in mammals this is impossible, and the oxygen, like the nutriment, must be taken by it indirectly from the mother's blood. When first lodged in the uterus and enclosed in the special cavity formed by the decidual membrane, the ovum is covered, as already described, on all sides with little villi, or fringe-like processes without blood-vessels; but very soon these become insufficient to supply the growing embryo with nourishment and then another means is provided by the formation of the allantois. The outer layer of the ovum, at first formed only by the vitelline membrane, is afterwards increased; first by the outer layer of the amniotic fold, and afterwards by the two layers of the allantois, all of which become intimately blended into one complex membrane. In consequence of this the blood-vessels of the allantois gradually extend outward into the villous processes, which grow larger and more and more branched, each branch receiving the loop of a delicate blood-vessel. At the same time the inner membrane of the uterus becomes filled with more numerous blood-vessels, and processes rise up and interlock with those from the embryo, so that the blood of the mother is only separated from that of the young by the thin walls of the delicate blood-vessels and villi, through which the liquid nutriment of the blood, and the oxygen contained in it, may freely pass to the embryo, and the waste materials from the embryo's blood to the mother, to be afterwards eliminated from her blood through her kidneys, skin, and other excretory organs. The combined mass of intricately intermingled blood-vessels, belonging both to the uterus and allantois, is called the *placenta*, or "after-birth." In the human race the original villous fringe of the ovum ceases to grow, after a short time, except upon one side, opposite the umbilicus, where they form eventually one large placenta. But in the mare and sow the processes remain to the end scattered over the whole surface, and in the cow and sheep they are concentrated into many small clusters or patches, scattered over the surface, which are called *placentulæ*, being, in fact, so many small placentas. The uterus in each kind of animal has a structure corresponding to the mode in which the placenta is developed. In the cow and sheep the internal surface, especially of the upper parts or horns, is covered with many tubercular processes, with depressions between, fitted for the reception of the numerous small placentas.

To trace all the changes of the embryo and the formation and perfecting of each organ would go far beyond the limits of a brief sketch, like this, of the more prominent changes. Therefore this subject must be passed over with as few words as possible.

Of the external organs it may be remarked that the limbs, when they first appear, at a stage a little earlier than that represented in Fig. 6, protrude from the sides as little finlike or paddle-like organs, without joints or toes, those that are to be the feet being exactly like those for the hands. The wings of birds at this time look precisely like the legs. All the differences in the limbs of the various animals are developed during the later stages. The intestine is at first a wide straight tube, without an opening at either end, the middle part being formed before either extremity, afterwards it increases in length much faster than the cavity of the body, and is therefore thrown into convolutions, and its different parts become changed from a straight tube into the gullet, stomach, large and small intestines, etc. The lower part of the allantois remains hollow, and being drawn within the body changes to the bladder, while the rest of the organ becomes useless at birth and is cast off. Thus after a time, varying greatly with different kinds of animals,* all the organs are gradually perfected, and becoming ready for use, the embryo is in a condition to be born, but the young of different animals are born in various degress of development. Some, like calves, colts, and lambs, being well covered with hair or wool and capable of running alone, while others, like kittens, pups, and especially the young of mice, rats,and similar animals, are comparatively helpless and often naked.

Parturition, or birth of the young, is a perfectly natural process, and among animals in a natural and healthy condition is rarely attended with any danger to the mother or young. Doubtless it is often too much interfered with among domesticated animals by ignorant but officious persons. But among highly bred and valuable animals, which are the most liable to be unnaturally kept, cases constantly occur where the care and judicious treatment of competent persons are necessary for the preservation of the life or health of the mother or young, or both. Every farmer and stock-breeder should therefore acquire such knowledge as may be necessary for such purposes, unless, as seldom happens, a veterinary surgeon be accessible at all times when needed. To give such instructions does not come within the scope of these lectures, yet I cannot pass over the subject without a protest against the violent and even cruel practices often adopted, when entirely useless and unnecessary. On all such occasions the utmost gentleness, consistent with the necessities of the case, should be insisted upon.

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*The mare carries her young from 44 to 56 weeks, (usually 47 to 50); the cow commonly 40 to 41 weeks, the average in a large number of cases being 285 days; the sheep about 5 months; the sow usually 114 days.

Practical Conclusions from the Physiological Laws of Reproduction.

From the ascertained laws already explained, we may derive some hints useful for all who are interested in raising and breeding animals.

1st. Since the ova of the female, which are to become the germs of future young, begin to develop at a very early period and continue to increase up to the time of impregnation, it is obvious that only healthy females can produce perfectly healthy young, and that constitutional diseases or imperfections will be most likely to affect the ova.

Hence only healthy and vigorous females should be used for breeding purposes, and they should be in the prime of life—not too young nor too old.

2d. Since the spermatozoa are developed in a manner analogous to the ova, and fertilize the latter by mingling their substance with the yolk of the egg, it is equally important that the male should also be perfectly healthy and sound, and free from all constitutional and hereditary diseases or imperfections.

3d. The development of spermatozoa takes place slowly and gradually, and although their production is hastened and increased by sexual excitement, to a certain extent, they cannot become perfectly formed and healthy organisms without due time for development. And unless properly matured and perfected they either fail to effect impregnation, or else so imperfectly vitalize the ovum that the embryo will perish by abortion at an early period, or, if developed, will produce only weak and sickly or imperfect young.

Therefore excessive use of the male for breeding purposes, either by placing him with too many females or employing him too often, is to be carefully avoided.

4th. The production of spermatozoa is one of the most exhaustive operations of the animal system, and if carried to excess not only weakens the organs and destroys more or less the vitality of the spermatozoa, but seriously impairs the general health, and especially the nervous system.

5th. In many parts of the country, and especially in the cheese-making districts of New York, abortion is excessively common among cows, and has become epidemic, causing immense loss. Doubtless this has its origin in several causes, and once started it becomes epidemic by reason of the peculiar sympathetic effect to which pregnant animals are remarkably sensitive. Doubtless one of the principal causes of this disease is the employment of inferior males, or those that have been so overtaxed by excess as to weaken the reproductive organs and impair the quality and quantity of spermatozoa.

6th. From the manner in which the young becomes united with the mother, so that the liquid portion of the blood may pass freely from one to the other, we may readily understand how the health or food of the mother may affect the embryo, and also how the mother's blood may be affected by the constitutional peculiarities of the embryo, and therefore, since the embryo partakes also of the qualities of the father, how the mother may be so affected indirectly by the peculiarities of the male, that she may transmit those qualities to subsequent young by other males. *The Tainting of the Mother's Blood* is produced in this manner.

Examples of this are common where a mare has first brought forth a mule. Subsequent colts for several years will present more or less of the mulish features. One of the earliest and most striking cases recorded occurred in 1815, when a nearly pure Arabian mare was served by a quagga, a species of wild ass, striped somewhat like a zebra. The resulting hybrid had the quagga characters well marked. Afterwards in 1817, 1818, and 1821, she had colts by a pure-blooded, black, Arabian horse, but each of them bore more or less of the peculiar features and markings of the quagga, although she had not seen him after 1816.

Cases have been noticed in breeding between horned and hornless breeds of sheep and cattle. When the first calf of a cow of a hornless breed has been by a bull having horns, subsequent calves, although by bulls without horns, and of the same pure blood as the cow, have had long horns.

Similar facts have often been noted in regard to dogs. A bitch of pure blood, having once had pups by an inferior dog, will not afterward produce pure-blooded pups by a dog of her own breed.

From these facts all breeders of choice animals should learn the necessity of allowing females to breed only with pure-blooded or desirable males, even if all the young are not to be reared.

Production of the Sexes.—The possibility of influencing the production of the sexes at will, has long been a fruitful subject for speculation and theorizing. Doubtless such knowledge would be very important, and in many cases of great practical advantage to breeders of animals. At the present time, however, we can do little more than show the fallacy of all the theories hitherto proposed. But in many cases it is quite as important to overthrow false theories as to propose new. One of the oldest theories is that which attributes the production of one sex to each testicle, usually the male to the right and the female to the left. This theory, although utterly absurd and fanciful, still has many adherents. Its falseness is sufficiently apparent from the fact that both men and animals, having but one testicle, in innumerable instances have begotten their due proportion of both male and female offspring. Another theory, which attributes the same qualities to the right and left ovaries, is proved false in the same way, since both women and animals having but one ovary have often produced both male and female young, while in female birds there is never but *one ovary*, and this, of course, produces both sexes.

The effects that have by some been attributed to particular foods or medicines, either before or after conception, are too absurd and fanciful to be for a moment entertained at the present day.

The wishes or ideas of the parents have been supposed by many to affect the sex in some unaccountable way, either at the time of conception or afterwards. But of this there is no evidence whatever, while it can scarcely be supposed that the lower animals, at least, have any special ideas upon this point, especially while under sexual excitement.

Difference in the relative age and vigor of the parents, has often been regarded as influencing the sex, and has obtained a strong hold upon the popular mind, but without any sufficinet reason or evidence. Many facts and all good reasoning oppose this view. Many cases of young and old bulls serving the same herd of cows in successive years, prove the contrary.

Yet the *age of the female*, and consequent constitutional changes, may influence the sex of her young, independently of the age of the male, and thus account for the cases supposed to confirm the last theory.

Girou states that female domestic animals when well fed, and left to much repose, bear more females than when poorly fed and severely worked. The sexes of diœceous plants are said to be influenced by the soil, more females growing on moist, rich soil, and more males in dry, sunny places. Such causes, by influencing the constitutional character and health of the parents, may have an important effect *indirectly* upon the production of the sexes, but this requires more investigation.

Thury's theory, proposed a few years ago, appeared at first very plausible, and seemed to be sustained by numerous experiments made by him or under his direction. This theory, therefore, gained at once many adherents.

According to this theory, the ova that are impregnated before being fully matured, or immediately after their discharge from the ovary, produce female young, while those impregnated at a later time, when fully ripened, produce males. Consequently, if this be true, females impregnated when the "heat" first comes on should bear females, but if toward the end of the heat, should bear males. And this result was claimed to have been attained in numerous experiments with cattle. But subsequent experiments made by Coste and others, upon cattle, rabbits, birds, etc., gave different and sometimes directly opposite results.

Very many facts observed among the lower animals, such as fishes, frogs, bees and other insects, in a state of nature, are also directly opposed to this theory. In fact, we find that every species of animal produces naturally a certain proportion of males and females,—they being about equal in monogamous animals, while in polygamous animals there are many more females than males.

Herein is evidence that man is by nature monogamous, the number of males and females born to the human race being nearly equal in all countries.

From all the facts and evidence hitherto obtained upon this subject in the higher animals, and from all the analogies with the lower ones, we may, I think, safely present the following conclusions:

1st. The normal number of young and the natural proportion of the sexes to each other, are constitutional with every species of animal, and are parts of their nature, implanted within them by their Creator.

2d. That no variations or peculiarities of the male, and no external circumstances attendant upon conception, can influence the sex of the progeny.

3d. That the male, whatever be his peculiarities, never produces constant results, in getting sexes, when bred with different females, while females are often observed to produce commonly, and sometimes *invariably*, the same sex, no matter how many males she may breed with. So that constancy in this respect belongs only to the female.

4th. That, therefore, we may reasonably conclude that it is constitutional with every female to produce a certain fixed proportion of male and female ova, which must, therefore, have their sexual character determined before impregnation.

5th. But since only a very small proportion of the ova actually produced can ever be impregnated in the higher animals, it may happen that although equal numbers of ova of each sex be produced, only those of one sex may chance to be impregnated. Nevertheless it is not impossible that some females may produce chiefly or wholly ova of one sex. In almost every neighborhood may be found women that have sons only or daughters only; and some such cases may be due to either of these causes.

6th. No theory has yet been proposed, and no rules established by which man can control the production of the sexes, either in his own race or among animals, though he may possibly influence it indirectly, in accordance with laws at present unknown.

Can we hope that such laws may hereafter be discovered? It would not be safe to say that this is impossible or even improbable. But to me it appears much more probable that the result may be attained indirectly by secondary influences, while the laws controlling it and the causes of its operations will remain as mysterious to us as the nature of the vital principle which causes one minute mass of yolk-substance to develop into a human being, while another, indistinguishable from it by our senses, will produce a hog, another a dog, another a mouse.

But from what has been said there may be derived a clue to the proper direction in which to look for the discovery of such modes of influencing the sex, whether directly or indirectly. This is, in my opinion, unquestionably to be found in the constitutional peculiarities of the female. Therefore any causes that may influence the growth, development, health, or condition of the female, may possibly influence, indirectly, the sex of the offspring. But such causes, to be traced, must be in constant operation during the whole period in which the ova are developing in the ovary, or from the time of birth or earlier, up to and through the whole period during which young are produced. And herein lies one of greatest difficulties in attempting to discover the influence of such causes.

There is, however, a most interesting and practical investigation, which might easily be made in this direction by stock-breeders, and one which is most promising of good results. This is to ascertain by direct experiment, continued through several generations, whether the peculiarity of giving birth to young mainly of one sex may not be "bred in" to a herd or flock, just as other desirable qualities may be, by careful selection of breeding animals, on both sides, with reference to such a quality.

In this case, suppose it be desired to produce a breed of cows that would have nearly all heifer calves. It would, of course, be necessary to select a cow which produces always, or at least usually, heifer calves, while the bull should be from a mother that rarely had a bull-calf. By such a course of breeding, persevered in for a series of generations, there is reason to believe that this quality, like many others equally remarkable, might be bred into a herd, and thus a heifer-producing breed originated, without detriment to the quality or value of the herd in other respects.

Jan. 15th. The Board met at the Trumbull House at 9 A. M. The Secretary presented the Reports of the Delegates to the County Fairs, which were read, and after discussion were accepted. These reports are given in this volume, accompanying the returns of the County Societies.

The Statistical Returns of the Agricultural Fairs were presented by the Secretary. These elicited discussions on various topics, after which they were accepted and ordered on file.

The President detailed the arrangements made by the Secretary and himself for a phonographic report of the discussions, which action was sustained by the Board.

The Board then adjourned to meet at 3 P. M.

The Board met at 3 P. M. at the rooms of the Young Men's Christian Association, to hear a Lecture from Prof. Wm. H. Brewer.

SYNOPSIS OF LECTURE

Delivered Jan. 15th, 1868, on "Parasitic Diseases that injure the flesh of Animals for Food."

BY PROFESSOR WM. H. BREWER.

For a long time certain mysterious diseases have afflicted man, often entirely baffling the skill of the doctor, the causes of which were utterly unknown, but which have lately been traced to his animal food. The *trichina* disease is a well known example. Moreover, man is often the home of troublesome parasites, living within him, producing painful and even fatal diseases, sometimes curable, at others not, which we now know are derived from the flesh he eats.

This lecture is announced concerning the flesh of *cattle* especially, but I have thought it best to extend it to other parasites from sheep and hogs.

Of late years much attention has been given to a study of the internal parasites of man, known to science as *Entozoa*, those worms or animals, by whatever popular name known, living within man, either in the cavities and passages of his body or within the substance of his tissues. For a long time these creatures were considered among the most curious and mysterious of animated beings. Where did they come from? Who were their parents? Had they any parents, or were they cases of "spontaneous generation"? were questions long asked and long unanswered—some are still unanswered. We now believe that all these animals *have* parents, but precisely what these parents are, is as yet unknown in many species. In some cases scientific investigation has traced out their changes and unraveled the mystery, in others we are as much in the dark as ever.

In this lecture I will not pretend to give you any *new* knowledge. I have not been an investigator in this branch of science. I only propose to give you some of the results of the investigations of others, to tell you what other explorers have discovered, and to place before you in a popular form reliable information that is scattered through various recent scientific publications not accessible to the most of you.*

The class of beings under consideration generally exist in several different *states* or *conditions*. Like insects, each species may have very different forms at different periods of its life, and all have more than one state or form. It may be that at one time they infest man or his domestic animals, and at another period may inhabit something else, so entirely different in form and habits as to be entirely unrecognized. Man and the lower animals are infested by multitudes of these uninvited guests.

I can perhaps best illustrate the different stages of their existence by comparing them with familiar insects, for we see these under several forms. For instance, we see a common caterpillar, it eats some plant and grows to a certain size, then it changes to a chrysalis, it eats no longer, it may bury itself in the earth, or wind itself into a cocoon, but it is entirely unlike the caterpillar, and after a time this changes again, and a moth or butterfly is the result, entirely unlike either, and this in turn lays eggs. We have here four states or forms—1st, the egg; 2d, a caterpillar which crawls and eats; 3d, a pupa or chrysalis, which is inactive; 4th, a butterfly, unlike in its habits and looks either of the rest. Quite often naturalists are acquainted with only some of the forms of a given insect; very often we are acquainted with a butterfly when we know nothing of the grub or caterpillar which produces it. Again, flies are maggots in one stage of their lives, the two states are very unlike. We may have insects which in one stage live within animals, and in another not; the ordinary bot-fly is an example. The early stage of the insect is a "bot," infesting the stomach of the horse, which perfects its growth, lets go its hold upon the coats of the stomach, and passes off with the excrement. After lying in the field in the pile of dung a short time, it emerges as a perfect insect, the bot-fly, which we see troubling horses and depositing numerous eggs on the fore-legs and about the throat of the animal. These eggs when by accident swallowed, hatch within the horse, to develop into bots within his stomach. I will cite another curious example. Many of you are familiar with a minute worm found in fresh water, especially in little brooks, that closely resembles a horse-hair, in fact, so closely in form and color, that there is a popular belief that they have originated from hairs, that if a hair be placed in water under the right conditions, it will develop into one of these "hair snakes." This belief is very common, but entirely unfounded. It is now proved that these "hair snakes" at one period of their lives are the intestinal worms of grasshoppers, sorely afflicting them.

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*In this lecture I have drawn largely from the "Report by Dr. J. L. W. Thudicham, on the Parasitic Diseases of Quadrupeds used for Food," published by Act of Parliament in 1865, from the writings of Cobbald and others in England, and Kuechenmeister, Leuckart and other German investigators, and have taken no pains to credit the especial authors with the views I have derived from them. We have no very extended observations upon these subjects made in the United States, but I have drawn what information I could from the medical journals.

I have not cited these cases as bearing directly upon the question, but merely to illustrate from examples familiar to you all, some of the characteristic changes in the lower forms of animal life, and especially insect life, to illustrate how the same being exists in different forms at different periods of its growth, and it may be at some period inhabits some other animal, or even different kind of animals.

In a precisely similar way, the *Entozoa* pass through different stages or states, which are often so very unlike each other that we may be perfectly familiar with two or more stages of the same species, without even suspecting that they are but different stages of the same thing, that one produces the other. We can only prove such identity by tracing the thing in question through its successive changes. In a large number of cases we have not been able to do this, but in others we have, and some of the results are very curious and of great importance.

Let us now pass to a more direct consideration of the subject, and first we will notice

Tape-Worms.—The origin of these curious beings was long wrapped in mystery, but by much study and observation during the last few years, we have at last a pretty correct idea of their changes.

There are quite a number of species known to naturalists, I cannot say how many, some inhabiting man and other species infesting the lower animals. In all cases, however, the worm occurs in two states, which are very unlike each other: the first as a sack, "measel," or "bladder-worm," in the flesh of one animal, the other as the developed tape-worm within the intestines of another animal.

With us and the people of Northern Europe, the most common tape-worm is known to naturalists under the name of *Taenia solium.* I will speak of this more fully, as it is perhaps the best known in all its stages. This tape-worm in man is doubtless always derived from *measly pork.* The *measles* in pork is perhaps known to the most of you. They are seen as little bladders, perhaps the eighth of an inch or less in length, lying between the fibres of the lean flesh of the hog, especially young hogs. When measly pork is cut with a sharp knife, if we cut these little bladders, a white, slightly viscid fluid escapes. If one of these measles or bladders be carefully dissected out, it is seen as a whitish, partly transparent bladder, filled with fluid, and a white, globular, opaque body may be seen shining through from the interior. If we take one of these bladders when fully matured, carefully remove it from the flesh, and very gently press upon it with a soft camels-hair pencil, a minute slit is seen upon the side near the opaque internal body. If this pressure is dexterously continued, a head and portion of the neck of a tape-worm may be made to protrude from this slit. If this be carried as far as it will go, it will be seen that the piece of tape-worm and the bladder are parts of one and the same animal, and that the head was only retracted into and the worm-like part coiled up within the bladder. When the head and portion of body is fully protruded, the bladder no longer shows any slit on its surface. It seems then that in the young state this head and neck is actually inverted within the bladder, that is, turned outside in.*

Now, this bladder-worm, or *measle* of the pig, is the first stage of the tape-worm, that is, bears a relation to the genuine tape-worm similar to the relation which a caterpillar does to a butterfly. This has been repeatedly proved by direct experiment. I will relate some of them which are authentic.

The first direct experiment was by the German investigator, Kuechenmeister, who gave a criminal, condemned to death, 75 measles from a pig at intervals during the last few days of his life. A post-mortem examination after execution showed ten young tape-worms in the small intestines. This was about a dozen years ago.

Leuckart, (another German, who has since made extensive observations on the Trichina,) gave four measles from the pig to a man who volunteered to have the experiment performed on him. In two and a half months the man passed joints of tape-worm in his evacuations, which he had never done before. Three months and a half after eating the measles, he was treated for the disease, and passed two tapeworms, each over six feet long.

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* This description is condensed from the report of Dr. Thudichum, already alluded to, and at the lecture in Hartford large diagrams, copied from the same report, were used to illustrate the changes here spoken of.

A medical student at Geneva, in the presence of several medical men, swallowed 19 measles from the pig, and three months afterwards found joints of tape-worm passing through him. He found more trouble in getting rid of his invited guests.

Then Keuchenmeister tried more experiments upon a criminal. In November the prisoner ate 20 measles, and 20 more in January. They were fed him in sandwiches made with sausage. He was executed late in March, that is, four months after the first and two and a half months after the second eating of measles. At the post-mortem examination, 19 tape-worms were found. Eleven of them were about five feet long, and had already "ripe" joints. The eight others were near full maturity.

Other proofs might be added, one of which is, that measles have often been produced in pigs by feeding them joints of tapeworm. Numerous experiments have proved this.

Now, how do the tape-worms develop? In this species the head is supplied with a circle of hooks, and also four disc-like suckers, with which it can lay hold of the intestines. They are found on the head while still in the bladder-worm, or measles of the pig. When these bladder-worms are eaten, the animal takes up its abode in the small intestines. The joints of the neck at this time are very short, and already quite numerous. In the process of development, those farthest from the head develop first, until they are half an inch or more in length, while fresh, short joints, which look like mere rings, form near the head. A full grown tape-worm has a large number of these short joints within the first inch or two nearest the head, while at the other end the joints are much lengthened, until the worm reaches the great length so often heard of. I saw one of this species a few days ago, that was 33 feet long. The joints when matured, or "sexually ripe," have within them a large number of eggs. When thus ripe, the joints loosen and pass off with the excrements, aden with eggs. If these joints or eggs are eaten by pigs, the eggs hatch within the animal, the embryos migrate into various parts of the body, and within the muscles develop into the bladder-worm or measle already described. It has been abundantly proved that pigs may and will be infested with measles if they eat the "ripe" joints of the tape-worm. Leuchart's experiments appear to show, however, that very many eggs are not developed, if eaten. They are so very numerous, that "if every egg of a tape-worm eaten by a pig were to live and grow, a single joint of a tape-worm would be sufficient to infest four pigs with 12,000 measles each."

I think this is a full enough explanation of how these creatures grow. When once within man, the joints successively develop, the ripe joints pass away laden with eggs, some of them are found by pigs, and are eaten, and hatch within the animal, the young worms find their way into the flesh, and then become the measles, to again infest man, should he eat this pork not well cooked.

This tape-worm is not a dangerous parasite; it is disagreeable and troublesome, but not dangerous, and in the present state of medical science it can be got rid of by proper means. You understand from what I have said, why it is, that in treating this disease, if the head be not brought away, the worm grows again. The neck is made up of fresh, immature joints, many yards are often brought away, and if the head and neck remain, another worm as long, perhaps, will develop from the part left. I do not know how long this may continue, but perhaps several years.

You have now seen that the life of this animal consists of two stages, the bladder-worm, and the tape-worm, and that these two stages are passed in two different animals. Now, this is the common history of all tape-worms; I will mention other species soon.

Bladder-worms in pigs, or measles, have been known for a long time, and described under the name of *Cysticercus cellulosæ.* They are occasionally found in the hog in nearly all countries where hogs are raised. They are vastly more abundant in Europe than in America, and the tape-worm is a much more common disease there than it is here. If the pig is but slightly infected with measles, it is impossible to detect it while the pig is alive, but if the pig contains many hundreds or thousands, as is often the case, then it may be detected. It then constitutes a well marked disease. As this disease is contracted during the early months of the pigs life, it has time to affect the shape of the body. "A thoroughly measly pig is very wide between the shoulders and very narrow across the loins." The eyes are affected and he carries a yellow streak of matter in the lower angle of the eyes. "Measles may be recognized by being felt on the inner side of the eyelids, or being felt or seen on the under side of the tongue."

The vitality of these bladder-worms or measles is destroyed by salting, provided of course that the salt penetrates to the center of the piece. But as a matter of fact, they often lie for a long time in the interior of large pieces of salted pork. Smoking kills them effectually, much more so than it does Trichinæ. In fresh meat, they will live two or three weeks if the meat does not become putrid. But I need not say, that the best sure preventative is by *thorough cooking*.

There is another phase of tape-worm disease that I have not yet alluded to. I have said that the bladder-worm or measles infest hogs, the tape-worm man. Now, the measle produces a worse disease than the mature tape-worm. If a pig be fed measles or measly pork, the tape-worms do not develop within him, he can only support the first stage of the tape-worm, or the measles. Not so in man. He may harbor either. "Man has therefore a prerogative before the pig, in this, that he can be infected by both the larvae or bladder-worm stage, or *cysticercus*, and by the fully developed or sexually mature stage of the *Taenia solium*, while the pig has never been found to harbor the fully developed parasite in its intestines.

The tape-worm is not a dangerous parasite, although disagreeable and troublesome; it can be got rid of by proper means. But the bladder-worms not only cause serious illness during their migration and growth, but may also endanger the life, and are the cause of many local diseases which affect persons for life. Thus in the opthalmic clinique at Berlin, upwards of 60 cases of *cysticercus* in the eyeball were observed in a few years. "From the eye they can sometimes be removed, but as frequently they destroy it for life. From the deeper structures of the body they cannot be removed, and therefore afflict it for life, and wander with it to the grave." (Thudichum.) There are numerous cases mentioned where the *cysticerci* of these species have been found in various parts of the human body after death, the liver has been found filled with them.

It is not easy to see how the eggs were taken into the human body, but perhaps in drinking water, or possibly they have been on some green food, such as lettuce, or celery which has been manured with nightsoil that contained the eggs. But however they get there, it is certain that they do occur.

I have described the genesis of this one species of tapeworm at such length, because it is precisely similar to that of numerous other *Taeniœ* or tape-worms, some of which infest man in one or another of its stages, others only inhabit lower animals. Dr. Cobbold enumerates eight species found in man, in one of the other states, but some are rare.

The next most common species, is known to naturalists as the *Taenia saginata*, also as *T. Mediocanellata.* In some parts of the world it is *very* common. The *cysticercus* or bladder-worm of this species, inhabits sheep and cattle, its tape-worm man. The mature worm, when developed in man much resembles the species already described, but the head is without the teeth or hooks, and the sucking disks are flatter, the shape of the head more blunt, the joints less swelling in the middle.

There seems little doubt but that man derives this parasite from the flesh of calves and sheep.

The geographical distribution is rather remarkable. It is occasionally met with in nearly all lands and races of man, but it is rare in some countries, and abundant almost beyond belief in others. I have already said that the *T. solium*, from pork, was the most common in this country and in Northern Germany; on the other hand, *T. saginata*, from veal or mutton is the most common in southern Germany, and other parts of the world.

Certain Cossack tribes, living almost exclusively on flesh, especially that of calves, sheep, camels and horses, very filthy in their habits, eating their food half cooked or even raw, and from the same table where the animal had been cut up, eating the fat, liver and kidneys raw, are infested by these parasites to an almost incredible degree. Kaschin writes that in Irkutsk, the Buraetes stationed as Cossacks there, and whose habits I have described, are almost all of them infested by tape-worms; "some individuals harboring as many as fifteen specimens at a time. In 130 post mortem examinations only two bodies were entirely free from these parasites, and among 500 other persons treated in hospital, the existence of these entozoa was demonstrated in all." In certain parts of Africa, especially in Abyssinia, these are very numerous indeed, but further remarks on their geographical distribution are out of place here, however common they might be.

Were I to confine myself strictly to the subject, it would not be necessary to speak of the other tape-worms, for of the remaining six species that infest man, some are so very rare as to be of no practical importance, and of others, in fact, the worst of all, man is not the "host" of the tape-worm, but of their larvae, or bladder-worms, called in medical works *Hydatids*.

But, although I am wandering, yet the matter is of so much interest in connection with raising animals that I will devote a few moments to other species.

There is another species in which the larvae or *cysticercus* inhabits the sheep, and are very common in England, less so here, and are known to butchers as "water-bladders," and were described as *cysticercus tennuicollis*. They are generally found in the abdominal cavity. The adult tape-worm inhabits dogs, and is known as the *Taenia marginata*. It closely resembles the *T. solium* in man. It is an important matter in raising sheep in England, (I know less of it in this country,) but the parasite rarely infests man. It is reported as occurring in man, but the cases are rare, some denying that the ripe tape-worm ever does. Mueller of Altona tried to breed the tape-worm in himself, by swallowing the bladder-worm, but failed, and it is a disputed point, whether it does infest man, but some, indeed several investigators claim that the first, or cystose state does.

There is another species in which the larvæ state or bladder-worm is more common in man. It is one of the most minute of tape-worms, and in the matured state infests the dog, one animal often containing an immense number in its intestines. It is called the *Taenia echinococcus.* The larvæ infest cattle and sheep, and also constitutes one of the most incurable parasitic diseases of man. The cysts multiply greatly in man, and are found in various parts of the body. The circle of development goes on without the agency of man himself. Cattle and sheep harboring the first stage of the animal, the dog the matured state. But in some way man may become infested with the larvæ, precisely how is not clear. It may be from flesh not thoroughly cooked, others believe that the eggs are introduced along with uncooked vegetables, or even in drinking water. In parts of Iceland, one fifth of the deaths are caused by this parasite.

I have extended this much further than I intended, suffice it to say, that there are many species of *Taenia* found in animals. Man is known to be infested by at least eight species, some of which he harbors in the adult or tape-worm form in his intestines, these he derives from the animal food. And others are by far the most dangerous ones he harbors in the larvæ or bladder-worm form, the precise source being more uncertain. Nor is it yet known how many of these species really do occur in men, only eight have been proved, but often "*hydatids*" are found diseasing his frame sometimes producing death ; these " hydatids " being now known to be the bladder-worm stage of some tape-worm.

The same is true of the lower animals. The " Water-brain " disease of sheep is caused by similar parasites, and a large number of *Taeniæ* are known to science from the lower animals.

Another class of internal parasites is known under the common name of "*liver flukes.*" This is best known as a disease of sheep, where it is quite common, but often cattle are also infested, and there are a few cases where this parasite has been found in the liver of man.

Sheep and cattle affected by this, show the disease known as "rot," in Great Britain. The liver is especially diseased. This parasite does not appear to be dangerous to man directly, being rarely found in him. But whether the flesh of sheep or cattle thus diseased, may be considered healthy food, is quite another question.

The whole history of the liver-flukes is not known, we only know it in one stage of its growth, as a flat leaf-like animal, inhabiting the ducts of the liver. The rest of its history is unknown, how the sheep get it, or where the larvæ form is developed is as yet a mystery. At the present time there is no effectual remedy known. I know nothing of its frequency in this country.

There are a number of other parasites infecting animals, more or less affecting their health, but not infectious to man, so I will not further allude to them.

The public fears have been more exercised of late about the flesh-worm from pork, or *Trichina spiratis*, than about any or all other parasites derived from animal food. Not that it is perhaps more dangerous, but certain causes have brought it prominently before the public. Aggravated cases of its effects have been paraded in the newspapers, somewhat to the injury of the pork market. At the meeting of the State Board of Agriculture, at New Haven last year, the members will recollect that I exhibited to them specimens of this parasite in human flesh, and then gave some account of it, but it may be well to again allude to it.

The *Trichina spiraiis* is a minute worm sometimes found in the muscles of the pig. It is so minute that it is barely visible to the naked eye, and it sometimes occurs in immense numbers. When pork thus infested is eaten by man, (if the parasite has not been killed by cooking or other means) it commences a new life, as it were. In the intestines, the worms rapidly increase in size, within a few days they are sexually ripe, the females being larger and more numerous, which females produce eggs which are hatched within her, the young being brough forth alive, in successive broods. This continues for two or three weeks from the time when the infected pork was eaten, and according to Leuckart, each female during this time produces at least 1200 to 1500 young. Meanwhile, the infested person has pains and other disturbances in the bowels.

These young are exceedingly minute, and as soon as they are free they begin their travels, or "migrations." They bore a path through the walls of intestines, and find their way to the muscles in all parts of the body. Some claim that they travel directly through the tissues, and thus reach the muscles where they finally stop; others claim that they get into the blood and are carried with it to all parts of the body, and are lodged in the capillaries, and then bore their way into the surrounding parts. They only develop in the voluntary muscles and in the heart; they never mature elsewhere.

When they are safely in the proper muscles, they bore within the sheath into an individual bundle of muscular fibre, coil up in a spiral form and make their abode there, feeding on the muscle, and attaining their growth. It is during this growth that the active and most painful stages of the disease occur.

While they have been migrating, they push their way through between the muscular fibres, separating them and crawling between as a mouse might be supposed to work his way through a sheaf of straw. As before said, the *voluntary* muscles and the heart constitute the proper feeding ground. If they find themselves within other tissues they perish, or they may work again into the blood vessels to be carried afresh to some other part of the system. If, however, they get within the voluntary muscles, or heart, that is, the red muscles, or lean flesh proper, they pierce the sheath of some fibre, and take up their abode within the fibre, feeding upon it as has been explained. Some observers claim that many of the Trichina do not absolutely enter the fibres themselves, but coil up between them, but in either case the substance of the fibre furnishes their food. They form a little nucleus where they lodge, and the fibre on either side shrivels and becomes softer, but at the same time the muscle swells from the extensive inflammation that sets in. About the end of the third week after the migration, the inflammation has reached its highest point, and the trichina is nearly full-grown. This is the most critical time with the miserable patient, who lies in intense suffering, every movement is exceedingly painful, the muscles are swollen and very painful to the touch, the breathing is painful because the intercostal muscles are full of them, the eyelids are swollen, for their muscles are also filled, the tongue is also swollen from the same cause, and if the parasites are sufficiently numerous the patient dies in acute agony.

If numerous enough, they may produce death earlier, or it may be delayed later, according to their numbers, or the constitution of the victim.

Between the third and fourth week, the fluid matter which immediately surrounds the trichina hardens, and the animal now lies nearly immovable in a plastic case. It is then said to be *encapsuled*, and soon reaches its full growth, and as one writer expresses it, "looks fat and sleek through the oval capsule." This capsule is attached at the ends to the fibre in which it is built.

At last, these attachments loosen, and at the end of the sixth week after infection it is free, and is shaped much like a lemon. This now becomes more rounded, and a deposit of carbonate of lime and magnesia takes place in the walls of the capsule, making a hard shell about the trichina, not unlike an egg-shell. This takes place quite rapidly, and in ten weeks or three months from the time of infection it may be said to be completed. They now have finished their growth, and if undisturbed remain there, withering within their cases; the lime shell is at once their coffin and tomb. These lime grains probably remain in the patient until death; it is certain that they can so remain for years, constituting little gritty grains in the muscle. They were often noticed in subjects for dissection long before the cause was known.

You will understand that if the flesh is eaten after the trichina have become matured, and before they have withered within their capsules, whatever animal eats the flesh becomes infected precisely as man becomes infected from eating trichinous pork.

I have now described the cycle of change as far as it is known. The flesh of an animal infested with trichina is eaten by some other animal or by man; in the intestines of the animal eating the flesh, the trichina develops into a larger form, producing young in immense numbers, which young migrate into the muscles of this second animal, to there develop into the flesh-worms that may infest other animals, and so on. Whether this is the whole cycle of change in the genesis of the animal or not, is doubtful. It is generally supposed that this is only a part of the circle, that these are the immature or larval form of some insect, the perfect state of which is unknown to us.

You see that death does not necessarily follow the infection by trichina; in fact, probably but a small proportion of the people who become infected die directly from this cause; the majority recover, and may live to good old age, in comparative health, if the attack was mild, or if more severe, they may be troubled with pains and aches from time to time, which are attributed to rheumatism, or neuralgy, or some other of the many ills that flesh is heir to.

It is only the worse cases that are fatal, but doubtless many cases occur where death results from this cause when it is attributed to something else. I received, a short time ago, specimens from the muscles of a woman, a subject for dissection in a medical college, in a neighboring State, where the cause of death was recorded as *fever*, but the flesh of the person was filled with trichina.

In the worst and fatal cases of this disease, the number of trichina found in the muscles almost surpasses belief. Within a year a minute piece of the muscle of a person who died of this disease in Massachusetts, came into my possession, and a dozen or more worms were found in a fragment not as large as a mustard seed. I will not attempt to estimate the number that must have grown in that poor victim, who was a young lady in the vigor of youth, but who died in great torture before the worms had attained full growth. In that case she was infected by eating raw ham purchased at a store. Several other persons were infected, some of which were very sick, but all are recovering, although some will doubtless be more or less afflicted with pains through life.

Rupprecht has made some statements regarding the numbers he found in the muscles of persons who had died of this disease. In one case, of a child 4½ years old, a hundred were found in about a grain of flesh. This child had died the 79th day after infection. Dr. Thudichum estimates the numbers occurring in an adult, as high as 28 millions of these worms.

This explains the intense inflammation that they induce, each individual muscular fibre that is infected is inflamed, and hence the excruciating pain, the swollen condition, the soreness to the touch, the pain caused by motion, and the chain of painful symptoms observed in such cases.

Now, where do the hogs get infected? The supposition is that they get the trichina from *mice*, which animals are often infected, or from others of the lower animals, which hogs may also eat. And a single infected hog may infect many people.

In the great trichina epidemic at Hettstaedt, Saxony, in October, 1863, which did so much to alarm the world upon this disease, and where 158 persons were attacked with the disease, and of this number 28 died, it is nearly certain that all became infected from a single pig. The whole matter was thoroughly investigated, and peculiar circumstances aided in establishing the proofs. There had been a festival, at which many persons had eaten of the same pig.

It would be foreign to the subject to speak of the various cases known, either the occasional solitary cases, or of the so-called *epidemics* that have resulted from this cause; suffice it to say, that perhaps no other similar disease has so excited the public mind.

What is the remedy? Why, to eat pork *thoroughly cooked.* Rupprecht has proved that if small pieces of trichinous pork are put in boiling water, the trichina all soon die, but if boiled in large pieces, the interior may not become hot enough to kill them. They are only partially killed by salting or smoking, unless this be very thoroughly done. If however, the pork has been long salted, or smoked, they are all or nearly all killed. But precisely how long this must be continued, we have no exact data. It depends upon the size of the pieces, the maturity of the trichina and other causes.

Of the other pararsitic diseases of animals used for food, I will not further speak. But in conclusion will merely state that all these diseases are less frequent in America than in Europe. This is partly owing to the fact that the poor eat less raw meat, but there may be other causes. But all facts speak loudly in favor of placing more restrictions on the sale of meat from animals not healthy, and also in favor of thoroughly cooking our animal food.

Descriptions and inquiries followed the lecture, after which the Board adjourned till 7 P. M., to meet in the Superior Court Room.

The Board met at the Superior Court Room, at 7 P. M. Subject for discussion, "Breeds of Cattle and Breeding."

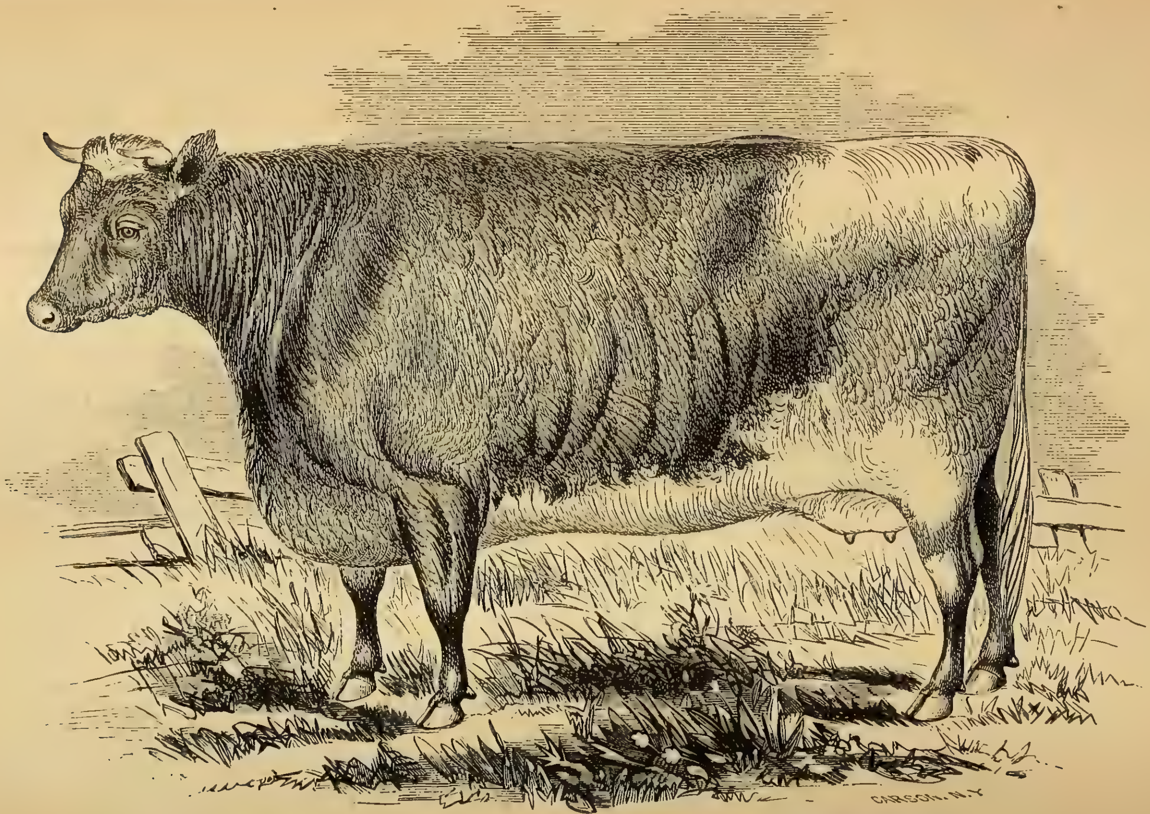
The Secretary read a communication by Sam'l W. Bartlett, of East Windsor, on Short Horns. The discussions were phonographically reported by Wm. A. Croffut.

SHORT HORNS.

SAMUEL W. BARTLETT, EAST WINDSOR.

The valley of the Connecticut River is very productive of grass and the raising of neat cattle has always been a popular branch of industry, and a half century since large numbers were fed and driven to New York annually. These were composed of the old common stock of the country. In 1824 an imported Short-horn bull was introduced here by Col. John Watson, and served cows at three dollars each, for one year, and the produce was a very marked improvement on the old stock. Since that time there has been one or more thorough bred bulls of this breed in this vicinity; with the exception of two intervals of one year each, and these were supplied with grades as nothing better was at hand. But it was soon found that grade bulls did not answer the requirements of the more intelligent farmers, who began to see and read what had been done in other places. The result has been that as generations of men have passed away, new generations have come on to the stage with new ideas and more inducements to make improvements in their domestic animals, so that at the present time the thorough bred Short-horn and crosses with them are the most prominent and the most sought for by all cattle raisers and purchasers. Perhaps it is not assuming too much to remark here that this improvement has been more perceptible in this town than in those adjoining. There are at this time in the town eleven farms that are in part stocked with pure blood Short-horn females, and there is generally a good supply of Short-horn bulls kept in the town, usually as many as ten.

The farmers in this vicinity have been favored the past season in having access to bulls of a very high order of excellence, among which are a two year old bull, Forester, bred by Mr. Thorne, sired by his famous 6th Duke of Thorndale; also, a yearling bull, Ulysses, a grandson of Mr. Thorne's 2d Grand Duke. Also a two year old bull, Hornblower, a grandson of Ambrose Stevens', 2d Earl of Carlisle. Many farms are stocked with high grades of this race of cattle, and they are highly prized and much sought for by purchasers of milch cows, some selling as high as one hundred and fifty dollars. Also by purchasers of oxen and steers for work or the stall. B. P. Barber & Sons, of Warehouse Point in this town, feed annually from one to two hundred head of oxen and steers in their stalls, connected with their distillery, and their expe-



Short-horn Cow, "BERTHA," the property of Burdett Loomis, Windsor Locks, Ct.

rience gives the Short-horn greatly the preference and in fact for all farm purposes, they have greatly the preference as *combining* more useful qualities under one head than any other race in this locality. Calves dropped here are sought for and bought at a few days old to be reared in towns where there are no thorough bred bulls ; many fine grade calves are slaughtered annually for veal when dropped late in the seasen A pair of high grade steers bred in this town were fed by Mr. Luke Bush, of Westfield, Mass., and were slaughtered at three years and nine months old, for Christmas beef, at Hartford. Dressed weight of the pair jointly, varied only a few pounds from 2600 lbs. A single grade steer bred by one of my neighbors, principally grass fed, sold for Christmas beef at Hartford, at four and a half years old, dressed weight, 1203 lbs. Others will equal if not exceed this, but facts are not at hand. B. P. Barber & Sons, of this town, sold four grade oxen from among their large lot in New York market, for $1175, with one season feeding. At the present time there is a pair of grade working steers, an exact match, four and a half years old, weight 3400 lbs, and they have never been fed grain.

Another pair (twins) thorough bred, a close match, sold recently to Morgan Goodwin & Son, West Hartford, age four years and three months, for $400, weight 3600 lbs. Another pair thorough breds, good match, three years and three months old, never having been weighed, but supposed by all good judges to weigh not less than 3200 lbs. Many cows are slaughtered among us that dress off from 900 lbs. to 1000 lbs. each. A milch cow (although dry at the time) at the Cattle show at Springfield, Mass., last fall, that was bred by one of my neighbors, I saw led on to the scales on the ground and her weight 1540 lbs. ; her fine form and milking capacity fully equalled her weight. Farmers here have been careful to preserve the milking qualities of their stock, being particular to use bulls descended from milking families ; with this object in view, as fine animals cannot be produced as when it is left out, as it is mostly where beef is the only object. In breeding choice animals too great skill and judgment cannot be used in the selection of bulls, as a few seem to excel all others in the superiority of their produce.

Farmers in this part of the State house their animals in the winter season, without exception, believing that warmth and comfort are necessary to thrift as well as a sufficient supply of food. The dressed weight of young cattle raised here since the introduction of improved stock has increased full forty per cent. This probably is owing in part to more attention and increased care of the animals as well as better animals to care for.

Early maturity is of the highest importance in neat stock, and it is found by experience that the Short Horn can be ripened at any age at the option of the owner, and not only this, but he can be kept improving and maturing until seven or eight years old.

Discussion was then opened by J. J. WEBB, OF HAMDEN. There are several varieties of Short-horns, some are valuable for fattening qualities, but useless as milkers, and *vice versa.* This was the reason why some persons raising them had been disappointed in their expectations.

I like the Alderney, but do not consider them profitable as common farm stock. The Devons excel as working oxen for capacity, travel and hard work. I think these breeds each to excel for particular uses, but can find no place for the Ayrshires. I do not consider them as superior for milk or labor. On the whole I consider the Short-horns as superior to all others, different varieties furnishing animals the best for beef or milk.

MR. COLLINS, OF COLLINSVILLE. I never saw a Short-horn man before so candid as Mr. Webb. He acknowledges most of the points I make against them. The greatest objection to Short-horns is the large amount of food they consume. Some of their cows do not give milk enough for their own calves; and I have known calves to be taken off and put upon other cows. The greater part of New England is not, in my opinion, at all adapted to the raising of Short-horns. Our farmers have tried them a good deal, and find that they cannot raise them on their land. Mr. Webb's land is good, and Short-horns flourish on it. For superior fattening qualities, and I think even for milk, I should give the Short-horns the preference if I were out on the prairies of Illinois. Here, hay is worth a large price at our very doors, and the Short-horns eat, at least, in proportion to their size. I did not intend to make any special plea for the Ayrshires, but I have no doubt that they are hardier, and they will get and keep in good condition where other breeds will not get their living.

I thought once that our natives were as good milkers as any cows, and I determined to cultivate them. Whenever I could hear of an extra good milker, I would go and see her and pay $50 to $75 for her in the old times when $30 was a good price for a cow. I became convinced that a majority of good milkers among our natives are accidents, and I think investigation proves that in a majority of cases neither their dams nor calves are good milkers.

I then went into Devons, but I never could get more than 16 quarts. They were good milkers, but I could not get what I wanted. Then I went and got a good Ayrshire bull, whose ancestor had given 25 or 30 quarts. I afterwards purchased Ayrshire cows; and as a consequence I have not now more than one native in my herd. I bought some grades, natives, and three or four Short-horns, but I found on trying experiments that they did not give as much in proportion to their feed as my smaller ones, and I discarded them. And my smallest cows now are the most profitable ones I have. The small cows keep the fattest. I am on poor pastures.

I have no special charge to make against the Short-horns. I have tried to be as fair as Mr. Webb. If I were where feed was no object, I should keep Short-horns. I have worked my Ayrshire bulls always, and they have worked well. I have no room for any extra stock, and I have not been able to raise any steers to try the experiment of working; but my bulls have worked, and I think they have got better and hardier stock from the fact of having been worked.

I began steaming food in 1856–7, and have steamed since with the exception of two years. I have generally cut up corn fodder and hay, and put some roots in to give flavor. I have never used much meal. To produce milk, I think that over two quarts of meal to a cow is useless. I have used considerable cotton-seed meal. Dr. Loring, of Massachusetts, says he has lost cattle by feeding this meal; but I have never had any trouble of this kind, and have never known it to be injurious. I suppose an animal could have too much of any rich food. I have never fed more than three quarts of cotton-seed meal per day, and have generally steamed that with my food.

PRESIDENT HYDE.—Do you keep an account with your stock?

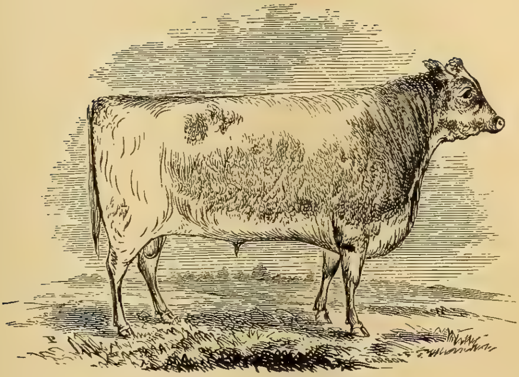
MR. COLLINS.—I cannot say that I keep an accurate account with each animal, but yet I have a way in which I can easily find it out. I have a record of how much each cow gives on the 1st and 15th of every month; I note down also how I feed each cow, in the way of bran and meal, and roots, but I have never been able to keep such an account of the hay fed. I have kept a record of the feed of four or five cows at a time, to ascertain certain things, whether it was any advantage to steam hay, to feed bran, meal, and other things.

Q.—Does steaming pay?

MR. COLLINS.—I don't like to answer the question categorically, because the result of others' experience is different from my own. Mr. Peters claimed that it was a great saving. Mr. Birney, of Springfield, Mass., thinks it saves him one-third. My own impression is that it will not pay to go to the expense of machinery to steam the best hay; but if one has a good deal of corn fodder and coarse hay, it will pay to steam it.

MR. WELLS, OF WETHERSFIELD, called the gentleman to order for not speaking to the topic.

The point was sustained, and Mr. Wells said, we have bred Short horns a number of years, and have never been able to make them profitable. We have now mostly Ayrshires, and are very much pleased with them. We find that our Short-horns consume fully one-third more than our Ayr-



Short-horn Bull Calf, "4TH LORD OXFORD." Six mos. old.

Bred by Samuel Thorne. Property of Burdett Loomis, Windsor Locks, Conn.

shires, while the latter are generally the best milkers. We have one Ayrshire cow which for three weeks in July averaged 57 lbs. of milk a day. This is the most we have got. In relation to Ayrshire grades making working oxen, we have one such, and he is the best in the team.

PROF. BREWER, OF NEW HAVEN, said he once visited the Imperial Agricultural School at Grignon, near Paris, where experiments are made. A large lot of cattle of different kinds are kept there. The feed is weighed, the milk kept separate and weighed, and also the butter. I recollect what was told me by persons connected with the school. They had tried various breeds, and had satisfied themselves that the best cow was a cross between the Ayrshire, the Durham, and a cow known as the Brittany. These little Brittany cows have been known to give eight times their weight of milk in a year, on little feed. The Brittany originated on a poor, rocky soil, and is the most hardy stock known. In the cross between these three breeds effected in this school near Paris, the Durham blood predominates.

Last week I attended the American Dairyman's Association at Utica. The great question was how to make cheese out of milk after we get it. After the meeting I met a gentleman from Kentucky, a thoughtful and well informed man, who said his cattle were grades from the first importation of Durhams, known in the time of Henry Clay as Long Horned Durhams, and he stated that the best milch cows are the descendants of these Long Horned Durhams. As to the Ayrshire, the French when they use a milking breed to cross with the natives are more successful with the Ayrshire than with the Alderney. If a cow gives one quart more than another per day, and has a milking life of ten years, the aggregate difference will be much greater than the value of the cow.

We raise cattle for three purposes, beef, food in the shape of milk, butter or cheese, and work. I do not believe it is possible to combine these three qualities in their highest perfection in one breed. I think it would be a splendid thing if we could get a cow that would keep as easy as the Ayrshire, grow as large as the Durham, and give milk as rich as the Alderney. It would no doubt be a profitable achievement if we could get a cow that would give milk largest in quantity and richest in quality for a term of years, produce calves that would make the largest and strongest oxen, and then turn out and fat on indifferent food, and produce meat as abundant and juicy as the Durham. I do not believe this is possible, or ever will be.

It is claimed that the Ayrshire is a partial descendant of the Alderney, originating in a cross between the Alderney and the native stock of that portion of Scotland.

MR. J. N. BLAKESLEE, OF WATERTOWN. A man of my age ought never to appear in this place, but I am as deeply interested in the objects of this society as any younger man. I shall have to differ from the gentleman who last spoke, in relation to the possibility of these three desirable qualities being bred in one animal. Connecticut fifty years ago was regarded as the best breeding State in the Union, especially Litchfield Co., where the Devons had been introduced and were raised. For the first thirty-five years I never heard any doubt about their being a pure breed. At that time the Short-horns were not spoken of much,—not at all in Litchfield Co. Now I do claim that three qualities sought for have been bred into that race of cattle. I believe that for working qualities and for milking they will equal any others, and it is conceded that their meat will excel, though they do not grow as large as the Durham. No stock is hardier. The first cow brought into the county had three calves after she was twenty years old, and the first bull when he was seventeen years old was put into the stable and bred from. I have seen one of these cattle across whose back three half-bushels would stand side by side.

At last Durhams were brought in, and within a few years the old race of cattle has fallen off in quality nearly fifty per cent. I claim that the genuine Devons that were kept pure for the first thirty-five years have not so declined. There is no perfect animal on the face of the earth, but we must try to breed in the best qualities, and this is as necessary in the sire as the dam. We should get our bulls from the best milch-cows, for the milking quality comes as much in the bull as in the cow. We must select an animal that is perfect in a given point where some other fails, and then breed in that quality.

Mr. P. M. Augur, of Middlefield. It seems to me the great question is, What breed is best adapted to our soil and our service? I must say I was very much interested in the article of Mr. Bartlett in regard to Short-horns. They are beautiful animals. If the farmers of Connecticut had the blue-grass farms of Kentucky, it would be the stock for us. But we find that almost all the surface of Connecticut is hilly and rocky. The three qualities which are spoken of are of about equal importance, and they can scarcely ever be found united in their highest form in a single creature.

A stock raiser recently told me that as good cows as he had were Devon grades, using the Devon bulls upon the native cows. One of his cows produced twenty-one pounds of butter a week. I think that the President of our Board has had Devons that produced two pounds a day, if not a little more. Thorough-bred Devons are the best cows I have ever had for butter-making. If by a judicious selection we may be able to produce a certain amount of butter a week, can we not go on and by another judicious selection introduce some other desirable quality? I think we can. I believe it is generally admitted that the Devon takes the palm for an exhibition of working qualities. As a fact I would state that at the late fair in Concord of the New Eng. Agricultural Soc., out of eleven premiums for working oxen, ten were taken by Devons. I know it is admitted by standard authorities, that as workers the Devons are not surpassed. And considering the quality of the beef, I believe that everywhere, as at the Smithfield market in England, the Devon surpasses any other. A good Devon calf of mine increased in girth four inches a month. In the improvement of stock let us set our standard high.

Mr. B. H. Andrews, of Waterbury. I have been for twenty-five years breeding Devon stock, and am satisfied that in our section of country it is the best a farmer can have for milking and working qualities and for beef.

It will be recollected that in the great test for beef in France, to decide on the various qualities brought out, the committee decided in favor of the West Highland ox, but the Devon was marked No. 2, and the Short-horn No. 7. The Devon was No. 1 for making soup. I was on a committee at the New England Fair in Springfield, where a seven-eighths Devon cow was brought into competition with a pure blood Ayrshire: they were both used for furnishing milk for market, and in the quality of milk it was admitted that the seven-eighths Devon was superior. As to the working qualities in steers or oxen, I would say that I sold a pair of Devons for $450, last August.

Mr. Collins. Farmers around me, in a poor section of the country do not average more than nine quarts of strained milk per day, not more than ten quarts when they are in their flush. I believe there is no need of so low an average. You can get up a dairy that will average ten quarts every day in the year. I have seen persons who would use any bulls, or keep any cows, without any regard to their breed or quality. I would talk with them about how much it would take to keep a cow, and say, "it costs as much as it would to keep a better one; you don't get more than a quart a day over the keep." I know that the people around me raise a calf generally without much reference to where it comes from, and no reference to the bull whatever. This is highly discreditable to us as a people. And if we could get the farmers to discard the scrub-bulls, and grade bulls, and use nothing but a pure blood, it would be a long step forward. Every man ought to raise the kind of stock adapted to the circumstances of his farm.

Q.—Would you ever use a grade bull?

Mr. Collins.—I would not. I think it advisable for all the farmers in the State to use thorough-bred bulls always. I saw the experiment tried a few years since. Dr. Loring of Salem was breeding Alderneys, he had a grade bull of very fine points indeed. He had 100 cows; he put this bull to 25 of them—native cows, picked up here and there. The next year he put a thorough-bred bull to the same cows. He kept the calves. They looked at first precisely like the others, as similar as if they were twins, but they improved rapidly, gained on and passed them, and soon became evidently better in every respect.

Prof. Brewer mentioned the case of a man who bought a cow supposing her to be a native, she turned out to be a thorough-bred Alderney, and gave 64 lbs. of milk a day. It had been thought that dairies could be brought up to 3000 lbs. of milk per year. I do not think that there is any given breed that will give perfect satisfaction. Take the Ayrshires, the Devons and the Short-horns and each farmer has his fancy. Let each one select a breed and cultivate it persistently and not lightly be brought to change. Let a man try a thorough-bred bull and he will never use any other. Cattle must be bred with care. I think that most of the farmers lose from 4 to 6 months of growth each year in their animals. And I believe that an animal can be kept growing through the winter, and when he is turned out to grass in the spring, he immediately goes forward. Whatever breed a man fancies let him stick to it, and not be satisfied with too little. I do not think we feed well enough or keep well enough.

Mr. Webb. I place the average of milk at 12 qts. at the flush. My grade Short-horns will average from 16 to 17 qts. and one high grade cow will give 25 to 28 qts. a day at the flush.

Q. Don't you value thorough-bred Short-horns higher than you do a grade.

A. Perhaps a high grade is just as good, you are not quite as sure however, that the calf will be as good as the mother. I want a cow to go dry for two months. If you milk nearly up to the time of calving you will generally get a poor calf, and lose largely in milk during the following year.

Mr. Blakeslee said he was about eighty years old and he had come down from Litchfield, to find out if possible some better principle of selection than that he himself had adopted. He believed that an important point is to select bulls whose mothers had good milking qualities, if we want to get good milking cows from them. He had a bull from such a cow and he could extract milk from his teats; take hold of them and the milk would fly a rod. He agreed with the Professor as to the care due to stock.

Mr. S. W. Bartlett, of East Windsor: The foundation stock of my neighborhood was the old common stock of the country. The change from this began with a thorough-bred bull, and the people were so well pleased that they put the half-breeds to a thorough-bred and the descendants for thirty years; and the result is that you can pick up 100 cows there fit for exhibition in a state fair. The cows now are not for sale. Our people do not feed a great deal of grain. Their principle is that the more cattle eat the better, but they must pay for it. The best farmers keep their cattle stabled in the day-time, but all are under cover. We have a farmers' club, and there a committee is appointed to go around and visit the farmers in the winter and summer; see how they feed and how the cattle look. One of those men who never troubled themselves to do chores, asked me, what kept my cows so sleek? He thought I grained them. The secret is, that I simply take care of them. Our best cows are sold to go into Hampden County, Massachusetts, adjoining.

There are some objections to Short-horns not yet mentioned. Take a pair of high grade steers, and you will find that by the time they are 4½ or 5 years old you cannot plow with them; they are so broad that the off ox cannot walk in the furrow, and they also outgrow the road. I have seen cows with bags so large that it was difficult to drive them home from the pasture. I owned a Short-horned cow that was afterwards sold at auction in Canada for $1300.

Mr. Wells said he thought that bulls were frequently used when too young; the oldest bull at the New England Fair was only six years old. He held that they should be kept until nine or ten years old.

Mr. Andrew Barnes, of New Haven County. I am a cattle dealer by occupation. I have never had an order for

Alderney or Ayshire oxen; but have frequently had orders for Durham and Devon oxen. The Durhams are admirably adapted to a good deal of heavy work. In a quarry for instance, they can lift heavier loads than any other cattle. But for the road, and ordinary farmers use, there is nothing like a Devon or a Devon grade. As regards cows for dairy purposes, I am not so well satisfied. One man says if you have feed to waste, get the Durhams because they eat so much I bought some cows to fatten a few years ago. I bought a native for $20 and a Durham for $40. In the fall I sold the native for $36 and the Durham for $80. I bought 60 Durham cows and fed them on my lot, and when they were fat I could get something for them. I made $40 as easy as I could have made $20. As far as milking goes, I find good and poor cows in all breeds. I have as poor Durhams and Devons as any other sort. But I should give the preference to Durhams; because when you get through milking them, they will sell for something. The Alderney cow is only one grade above the goat.

I was recently admiring a cow in Rockville; presently the owner came along, he said that in 6 months he had sold $150 worth of milk from that cow. We can make as many pounds of beef per year in some places in this state as in Illinois. I know this by actual experiments. One season after purchasing a herd in Illinois, I divided them and brought one half to Connecticut, leaving the other half in Illinois. The part brought to Connecticut did better than those left at the west.

Mr. Beach, of Hartford. The statement that the Alderney is only one remove from the goat, leads me to say something. I believe the Alderney's have a place, which they fill very well. A gentleman told me a few weeks since, that his average of butter was larger than any other dairy in the country that he could hear of. They did not consume more feed than others. If a man wants cows merely to make butter, the Alderney is the most profitable stock he can raise or keep. A man in England, who keeps 60 cows exclusively to make butter, recently reported that they are all Alderneys. So that it must be a pretty fair breed in England. The quantity of milk is not very great, but I have a cow that gives me 16 quarts, 33 pounds a day when in the flush. I have milked ten quarts after milking her six months. And in testing the milk of three Alderney cows I found that $6\frac{3}{10}$ quarts of milk made a pound of butter. We call it a good average—better than any other stock I hear of.

Q. If you had a friend setting up a dairy, would you advise him to stock it with Alderneys?

A. I happen to have just such a friend; an intelligent, active discriminating man. He has just been through the country to see where he can do the best, in getting up his dairy for butter. He tells me that he shall stock it with Alderneys—pretty much all pure blood. He thinks that, with the same food, he will get a good deal more butter than from any other stock. If stocking a dairy for milk I would not get Alderneys, but if I wished to make butter, extra in quantity and quality, I would go in for a pretty good lot of Alderney stock. I am satisfied that a cow does not eat in proportion to the live weight.

Mr. S. N. Beers, of Newtown, inquired when heifers ought to come in.

Mr. Andrews replied that those coming in at 2 years made better milkers than those coming in at a later period.

Mr. Barnes: If a heifer is so disposed, it is undoubtedly better to let her come in; but then give her some rest while she is carrying her second calf.

Mr. Collins: I prefer to let heifers come in at 2 years old, and then wait 18 months before having another calf. However, if a heifer is small, I would let her go to $2\frac{1}{2}$ or 3 years. I think that a point in using a thorough bred bull is the certainty of getting what we want. Other animals are inclined to breed back. From a thorough bred bull we get a transmission of thorough bred qualities, because the qualities have become fixed and permanent. Any thorough bred bull is better than a grade.

Mr. David Clark, of Hartford: I would inquire of Mr. Collins if he thinks that small cows give more milk than large ones? I would also ask whether the gentleman takes pains to breed small stock for the purpose of getting better stock.

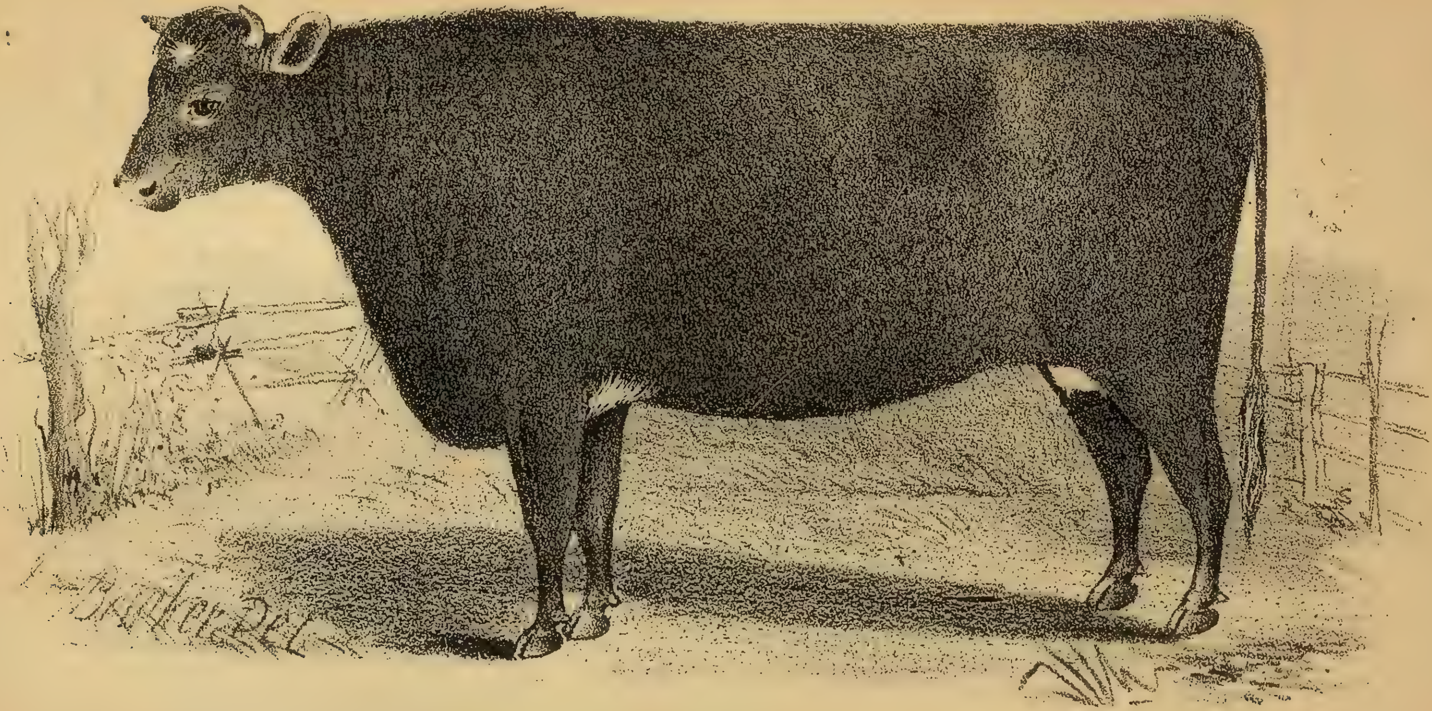
I have tried all, from the Devons to the Durhams and the Alderneys, where I am now. I have endeavored to increase the size, partially by good feeding; and I think it is highly important that when we put calves up for the winter they should be kept in good condition. I feed a little meal—say a quart a day. I presented a bull at the fair. My object has been to increase the size of this stock. I sold a pair of oxen in this town, whose net weight was 3100 lbs. I think there is a very wide difference between a goat and an Alderney. I recently had a two year old heifer that made nine pounds of butter a week from January to April. Her sister is in this city and I sold her on the condition that she would give 24 quarts in the height of her flow. Her owner told me that she had given 26 quarts a day for two months. I think a cow is in her best estate from 7 to 10. There is a section of this state where I think the Short-horns are the best breed—in the rich valleys. Then there is a part where I think the Devon will thrive best—in Litchfield County, and a part of Windham. There is other land where I would take Alderneys. As to the Ayrshire, I am of the opinion I formed when in Ayr; I was disappointed in the size of them; I thought they would be too small for oxen, and gave up the idea of importing them. I have a good opinion of the Aryshire cows, formed from the stock of Mr. Wells, of Wethersfield.

Mr. Hyde: I agree with the gentleman as to the adaptability of Devons to my neighborhood. I have found it a matter of necessity to breed Devons. It is the only breed that can be sustained upon half the land of Connecticut. I should prefer cows always to come in at two years. Alderneys incline to come in early. I had an Alderney calf in pasture with a bull weighing 1800 lbs. In the spring, when I was ready to turn my cattle to pasture, I discovered that the heifer was with calf, and at 11 months and ten days it dropped a calf from that bull.

MR. CLARK: I have used a bull when it was a year old; and I kept him until he was 5 past. I think that a young bull gets a larger calf than an old bull. There seems not to be much difference as far as the milking qualities are concerned. I have not had a poor cow since I commenced with Alderneys. I think cows make much better milkers when allowed to come in at 2 than at 3. I find that my bull's first gets are bull calves, and the later are apt to be heifers. I once tried this experiment with sheep, and the first ten lambs were buck lambs, and the next ten about evenly divided and the last ten almost entirely females.

DR. RIGGS, OF HARTFORD. I believe that many a young bull is ruined by being allowed to run in the pasture promiscously with cows when they are in heat. He has no discretion and covers them ten, twenty or thirty times without rest. I let a young bull into my cows once, while they where in this condition, without my knowledge and the result was he went to them forty times in one forenoon. I consider him ruined. Bulls have no sense about these things. When a bull gets old enough put him under the yoke, and he will be more hardy and strong. As to cows if I wanted a good milker, and cared nothing for expense I would get a Durham and feed her well. There are two kinds of Ayrshires, the little ones and another kind that are merely stunted Durhams, as Solon Robinson calls them. There are also two kinds of Devons, the light and the dark. The native red cattle of Connecticut as we call them, are nothing more or less than decendants of original importations of Devons. They grow to fine size and there is nothing better, when you can get them pure, either for work or milk. If a man seeks merely the quality of his butter, there is no animal that produces such fine grained butter as the Alderney. The Durhams cannot begin in quality of butter with either the Devons or Alderneys.

MR. WELLS. Our experience does not agree with Mr. Clark's theory in regard to the first and later gets. As far as our observation goes, the number of heifer calves has rather exceeded the number of bull calves in the first gets.



SHORT HORN PRIDE 2D.

At 2 years old.

PROPERTY OF S.W ROBBINS, WETHERSFIELD, CONN.

Another thing; I have observed that when people have brought grade cows to my thorough-bred bull, expecting to get fine calves, the calf would sometimes run backwards, towards the original stock of the mother.

THURSDAY MORNING, JANUARY 16TH.

The Board met at the rooms of Young Men's Christian Association, 9 A. M.,—*Discussion:* Dairy Husbandry, Feeding for milk or other purposes.

The Secretary read a communication from H. B. Platt, of West Redding, as follows:

My farm is situated in the town of Redding, Fairfield County, one and a half miles from Sanford's Station, on the Norwalk and Danbury Railroad. My farm is about 140 acres, of which eight are plowed, thirty-two mowed, and about fifty pastured, one-quarter being bush pasture and the rest woodland.

I am in the milk business and keep a small dairy of twelve cows, a pair of horses and a yoke of oxen. I send milk to New York daily. You will see by the following statement that my dairy may be called a winter dairy, my cows dropping their calves with two exceptions in October, November and December.

I give a statement of the produce of my twelve cows for the last year.

MONTHS.	QUARTS.	PRICE PER QUART.	AMOUNT.
Jan.	2,660	.06	$159.60
Feb.	3,290	.05¼	172.72
March	3,280	.05	164.00
April	3,120	.04	132.60
May	3,112	.04	124.48
June	3,470	.03½	121.45
July	2,600	.03½	91.00

Aug.	2,137	.04	85.48
Sept.	2,110	.04	84.40
Oct.	1,300	.04½	58.50
Nov.	2,760	.06	155.60
Dec.	3,360	.06½	218.40
	33,199	average 4¾ nearly.	$1,568.23

The average per cow is 2,766 quarts, being about seven and one-third quarts per day for the year.

The amount per cow is - - -	$130.69
Calves sold when one or two weeks old, averaged,	4.50
	$135.19

My milk is prepared for market simply by cooling in a water box under the barn at this season. In hot weather cool in as good a spring as can be found. Some persons say stir it when cooling. I say *not.*

I have not lost a can by souring the last year, which is remarkable as most persons have more or less sour.

The number of cans required to send three daily is about twenty. They hold forty quarts. Cans will last ten years if *not lost.*

I cannot say that my milk-house is the best in the world. If you have a very cold spring all right, if not you cannot be too particular. My milk house is a temporary building of old boards that will not draw the sun, about eight feet square and is not air tight.

The spring is located under a large birch tree which is a good protection.

I will give you some idea of my mode of feeding. Drive to pasture in summer. Feed a little hay mornings towards the last of October, the rowen getting frosted. In November feed two quarts of meal on six quarts of cut turnips. December 10, pasture gone, feeding now getting organized.

In the morning, on entering the barn, feed hay; next is milking; then feed hay. After breakfast, feed three quarts steamed corn with two of bran or corn ground in the ear, with oats, which is preferable as it does not stick to the mouth.

This is thrown on the corn, (one quart of old western mixed corn will make three quarts after steaming); then let out to water, and hay or stalks from the stack, if the weather is fine. If not, they go back to the stables, which are in a warm basement. At 3 P. M. feed cut-stuff, with two quarts of bran or ground corn, oats, rye or buckwheat—a mixture is preferable. On going to milking, feed hay, and after it is done throw in a little more, if it is needed. The last thing before going to bed, go to the barn and see that all is right, and feed again with hay.

My motto is small feeds, and often; the result is sure. I do not require as much grain as some of my neighbors, from the fact that my hay is cut so much earlier, commencing the 20th of June, and finishing about the middle of July. My cows I buy about the country. They are of different breeds, most of them with a sprinkling of Durham. I count Devons not as good generally, yielding not as large a quantity of milk as the Durham and native crosses. If I was in the butter business I should speak differently of this breed. This breed is very highly prized by me, especially for oxen, as no breed of cattle can endure so much hardship, and in beauty, style, and working qualities they cannot be beat.

In this locality I think there is no use you can put a farm to that will pay as well as milk. The fattening of calves is quite a business, and a very profitable one, too, calves selling at twelve to fourteen cents per pound, or fifteen to twenty-five dollars per head, at six or seven weeks old. Of course there are no calves raised here.

Perhaps I ought to speak of my manures, which I prize highly, and are far superior to those of farmers not in the milk business.

I can manure thoroughly six acres for plowing; this would top-dress eight acres well. This and plaster are all the fertilizers I use. I do not think it very profitable for a milk man to plow very much. I do not raise all the grain I use, having bought the last year about $200 worth, perhaps a little more. My help has been one man by the year, ($200,) a boy six months in summer, and myself.

The statements of the letter were received with great satisfaction, and the President inquired if any gentleman present knew Mr. Platt.

Mr. Camp, of Norwalk. I am very well acquainted with Mr. Platt. At our county fairs he always exhibits valuable working cattle, and generally takes our first premiums. Not a man in the county excels him. I am not acquainted with Mr. Platt's premises.

Mr. B. B. Plumb, of Trumbull. I have been to his place. He has a rough looking farm, but has worked it up pretty well. He consumes about all his hay. I think his manure is not made under cover, but is thrown out and decomposed.

Mr. W. Barnes, of Bristol. There is another quality peculiar to Alderney butter, which has not been mentioned. It is harder than other butter, and bears transportation much better in the summer. One year I furnished a hotel in New Haven. I never had a large enough quantity to seek an extra price for it. The butter sometimes commands more than other butter, but I was satisfied with the highest market price. The butter is of high color also. The winter butter is of as good color as the butter of other cows on grass feed, packed down in the fall.

Mr. Clift, editor of the American Agriculturist. I think that the high price that the Alderney butter will command, is a strong argument for raising the stock. In the town of Stonington a Mr. Davis has kept grade Alderneys for years, and a Mr. Billings raises pure Alderneys, and they are able to get higher prices for their butter than their neighbors do. It is harder, the color is richer, and the flavor very fine. The butter will always bring some four or five cents per pound more than other varieties. The milk makes superior cheese. I have had cheese from Mr. Davis' herd for many years, and it is better than any I can get anywhere else. I think the Alderneys well worth keeping for the extra price their butter and cheese will bring.

Mr. Augur, of Middlefield.—Is the Alderney butter made in winter equal in color to that made in summer?

Mr. Barnes.—Hardly, perhaps. It is of as good color as the butter of our best native stock in summer.

Mr. Clark.—I suppose it is true, as somebody has said, that butter made by a well-known man, whose produce is always of the first quality, and who is prominent for his neatness and order, will bring a few cents more a pound than that of others of the same quality. But this will not account for the higher price which Alderney butter commands. It is well known that Mr. Norton, of Farmington, has bred Alderney stock and made butter and sent it to Boston. I understand that his butter brought about ten cents a pound more than other varieties. I have heard that it is a little oily, and of a splendid color.

Mr. Barnes.—The oiliness probably resulted from being worked over too much.

Mr. Augur.—How many pounds of butter did you produce weekly from each cow?

Mr. Barnes.—I did not experiment with all the cows. I set away two days milk from one cow, and from eight quarts and three half-pints I made two and a half pounds of butter. I churned the cream only.

Mr. Augur, of Middlefield. Some years since, I bought an Alderney heifer of Mr. Norton, of Farmington, from his "Lily." I inquired, while there, in regard to the making of his butter, hearing that it brought a higher price. I went into his dairy room· I must say that the management of his dairy was excellent. It was in a basement; the heat was regulated by a thermometer, and kept at just such a point all night. Such care would inevitably insure good results in butter-making. Butter was then bringing thirty-five cents a pound; he told me that he received fifty cents for his at the Revere House, Boston. Now, was the butter *worth* so much per pound, or was it Mr. Norton's reputation? I think it was merely a matter of fashion. The milk had been analyzed, the butter was nicely made, Mr. Norton's reputation was high. I find that others generally do not get more for their Alderney butter than for other varieties. I admit that Alderney butter has a high color, and a peculiar and wax-like consistency.

Mr. Clift. I do not suppose that a pound of Alderney butter would go any further than any other butter. Yet there is an intrinsic difference, and a basis for the reputation which it has. The butter brings more because it is Alderney butter. It is harder and has a better color. It does not depend as much on the reputation of the man as on the reputation of the butter. If he has a good lot of it he can always get a better price. It has a solidity and a peculiar flavor, and there are men of means who greatly prefer it for the table, and will have it, if it is in the market. I do not doubt that it would pay to keep Alderney cows and dispose of the butter and cheese at 25 per cent. advance.

Mr. Collins. The Alderney cows are getting a little better treatment than last night. As to the price, Mr. Norton was obliged to go to Boston with his butter, because it would bring no higher price than other butter in Hartford or New Haven. It is largely a matter of fashion, more largely a matter of taste. Some do not like Alderney butter. At our house, we think it a little rank, and do not like it as well as ordinary butter. We do not eat it on our table for that reason. I have experimented somewhat. I have often made a pound of butter from six wine quarts of milk. I have known it to be made from four quarts.

Q.—Would you keep Alderneys for farm stock?

Mr. Collins.—If the gentleman means by "farm stock," whether they should be kept as some farmers keep their stock, turned out on a cold hill-side in winter, I agree that Alderneys are not farm stock. They are not hardy. They require good treatment, the best, if possible. They come from a warm climate. If I were going to have an exclusively butter dairy I should keep Alderneys.

Mr. D. H. Willard, of Newington. As to the quality of Alderney butter, I have no doubt it is superior to any other kind. I know Mr. Silas Root sells his butter in New Britain for ten or fifteen cents per pound more than others can get. I know families who have had it for years, and they like it and continue to receive it. I bought a cow of a man who warranted her to make a pound of butter to every five quarts of milk, and she did it.

Mr. Bartlett. A few years ago, I was at Mr. Buck's, one of the Alderney men. Said he, "don't look in the pig-pen, there is no milk for them; after we skim our milk there is nothing left but water." I had a neighbor who prized very highly an Alderney cow. One morning he took a pail of my Short-horn milk, and I took a pail of hers; he afterwards said that the women never saw the difference. (Mr. Bartlett here narrated several instances where his Short Horn butter had been preferred to Alderney, also several cases tending to show the greater probability of Alderney cattle dying of disease on account of their feebler constitutions.)

A member here called for a statement of the experience of President Hyde. It is out of place to ask me to speak of Alderneys, I am a Devon man out and out. I have had some little experience with Alderneys and Durhams. I began with Durhams, but those who know my locality know that I have nothing to support Durhams on. I gave them up. I then went into Ayrshires, the stock of Mr. Holmes of Windham, and Randall of New Bedford. They soon ran out. I then bought Devons, and found them peculiarly adapted to my locality. I have a few Ayrshires left. I keep a few Alderneys, and corroborate all that has been said in regard to the quality of their butter. They are not large milkers, but the milk is excessively rich—decidedly too rich for my taste. The butter of pure-Alderneys is quite objectionable to me and my family. If I made Alderney butter I should sell it. I think Devon butter is best in quality. The gentleman thinks there is no difference between Alderney and Durham milk. He has a breed of Durhams that are exceedingly good. My Alderney milk contrasts strongly with any Durham I ever saw. You can select every pan, set with other milk, and can tell pretty certainly if it has been mixed. I value the Alderney chiefly for mixing with other breeds, to improve the color of the milk and butter. I think a man who keeps many cows can afford to keep one Alderney cow for the mere purpose of improving the color of the milk.

One Alderney cow will give tone to the color of the milk of six cows of other breeds. In cows that are crossed I have found no objectionable flavor such as I have mentioned as belonging to the full-bloods. I know of one Alderney cow that gave 16 to 18 quarts of milk, making about two lbs. of butter a day. But there are exceptions to all breeds. I owned a Durham grade cow, coming from Windsor, which, on an actual trial produced two lbs. and fourteen ounces of butter per day for thirty days, upon an average of fifty-five pounds of milk. The Devons we do not consider great milkers, but in quality I think they are next to the Alderneys. I have one thorough-bred Devon that made two and a quarter lbs. of butter a day in the height of the season.

Mr. Gates, of Hartford. The Alderney beats all other breeds in butter-making. The evidence comes in so strong that we cannot deny it. They were bred in England for butter; they are raised in America for butter. They are good for nothing for oxen, and little for beef. We need now to improve our cattle for the quality of the meat; select and breed for it as they do abroad.

Mr. Barnes.—What class of cattle make the best beef?

Mr. Gates.—Those which, if killed as calves, would make white veal. Go into the market, you will see one quarter of veal as white as a woodcock. Your wife can't give you a bad dinner from it. Another is red; no piece of it will make a good dinner. Now we must get the calf that would produce this white veal, and raise it to a cow or an ox.

Mr. Barnes.—Would it not be difficult to tell whether the calf would die white or red?

Mr. Gates.—It would be difficult for a man not an adept. In every herd and every breed the white and red meat are found. There are butchers in New York that never get any other cattle than those of white meat. If they have thoroughly learned their trade they never make any mistake. I believe I can pick out a calf that will dress white, and one that will dress red. We must learn this; then we may have good beef.

Mr. R. W. Robinson, of Hampton. We have in Windham county a few farmers who breed thorough-bred stock, but probably nineteen-twentieths breed natives or grades. And notwithstanding this, I believe that Windham county butter and cheese are as famous in Providence as Orange county butter and cheese in the markets of New York. I think the extra feed makes a difference in the quality of the butter. The men who keep Alderneys think they are going to get an extra price, so they feed extra.

President Hyde named a neighbor who fed as poorly as anybody in the county, yet he got an extra price for his Devon butter.

Mr. Blakeslee had no doubt that extra feeding affected the quantity of butter. One of his sons, after feeding a Devon cow on yellow pumpkins, measured the milk. There was six quarts, a pint and a half, and a gill of milk. He took off the cream and stirred it, and made within two ounces of two pounds of butter.

Mr. J. J. Webb, of Hamden. I have a milk dairy of twenty-five or thirty cows, and have experimented somewhat, but not with the accuracy of Mr. Collins. I have no poor hay. I cut all my feed. When it is very fine, I cut in oat or barley straw with it. I feed it dry, giving the grain by itself. This winter I am feeding with corn meal and malt sprouts. To twenty-two cows I give a bushel of malt sprouts and corn and cob meal. For several years I fed brewer's grains, but this feed makes large quantities of very poor milk, and I abandoned it. I am satisfied it will pay any man to cut long hay. It makes a difference in the quantity of milk. In 21 cows I sometimes lose 25 quarts a day, when I am obliged to use long hay instead of cut. I think I get pay for my machine, a Hiccox cutter, costing one hundred and thirty dollars, about twice a year. Once in the extra milk obtained and again in the quantity of hay saved. First thing in the morning we feed the cows some hay, and immediately after breakfast give grain and feed. I am now feeding a bushel of turnips to three cows per day, and feed a bushel of the cut hay three or four times a day. My milking cows are fed five or six times a day. Have raised carrots to some extent; it is back-aching work. Turnips are a more certain crop, and I can raise them cheaper. I have raised sugar beets, and like them very much. I think the common white turnip will make more milk than any other root. I have raised about 3,000 bushels a year, and fed them. I get about 600 or 700 bushels an acre. I begin to mow my grass in June; have been trying to get through haying the 10th of July, but have not succeeded. I think carrots will give a better color to milk than turnips, but hardly think they will keep cattle in better flesh. I have to feed my Durhams an extra quantity of meal.

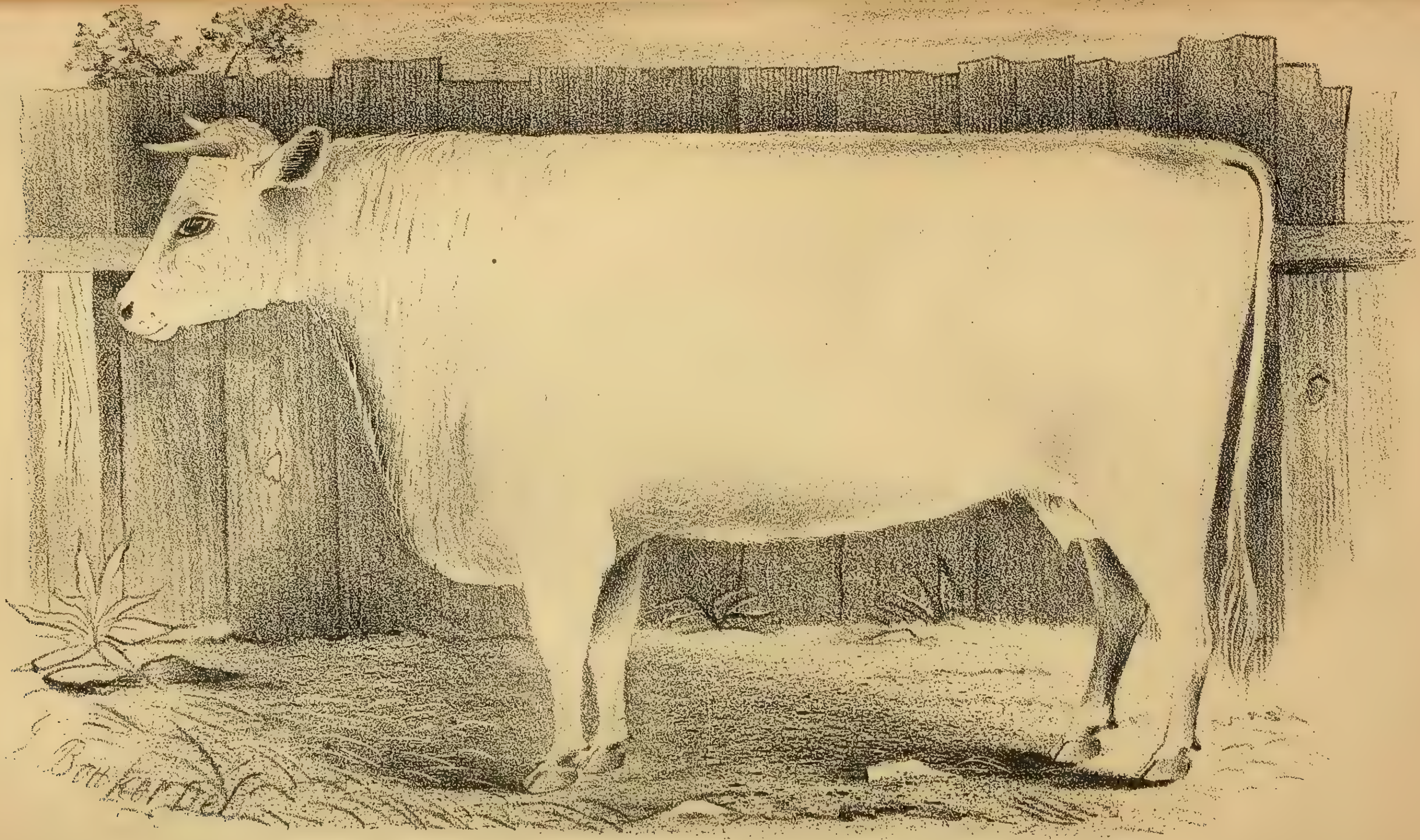
Mr. Collins.—That is always so with the Durhams; I have to do the same.

Mr. Webb.—I think a milch cow will consume about 2½ tons of hay a year.

Mr. Augur, of Middlefield. As far as my experience goes, I think a cow should be in good condition when she comes in. A cow in the lower part of our county that had a high reputation, was owned by a clergyman, who rather neglected her, so that she was very thin when she came in. A man knowing her high reputation bought her, but she gave little milk and made little butter, and the disappointed purchaser sold her at a heavy loss. She was bought by a farmer who kept her well fed and when she came in again, she made more than three lbs. of butter a day, and justified her reputation; the only difference being, the first year she came in thin, the last year in good condition.

Mr. Robinson. In my experience, carrots are excellent for a cow. Some six weeks ago, I gave two cows a peck of carrots a day. It not only increased the quality but the quantity of milk a day. I have been very successful in raising carrots, and for many years, I have fed them to my oxen, horses, and hogs, and I believe that it is a profitable crop to raise for every kind of stock. I give them raw to the horses and cows, and boil them for the pigs.

Mr. J. B. Lyman, of Stamford.—The farmers in my vicinity complain of a great falling off in the quantity of milk, about



SHORT HORN CONSTANCE 5TH

At 3 years old.

PROPERTY OF S. W. ROBBINS, WETHERSFIELD, CONN.

the time their cows leave pasture in October or November, and are put on hay. Those who keep a milk dairy and furnish regular customers, are obliged to buy more cows at this season, or else disappoint their patrons. I wish to know if it is possible to feed in such a way as to avoid this embarrassing break, and how it can be done.

Mr. Collins.—I have tried to obviate the difficulty as far as possible. I always have some corn fodder sown late, hoping that it will escape the early frosts. If it does I use that. I put my cows in early, and commence steaming about the 1st of November. There is no way to avoid the loss entirely. I try to have some come in about that time, in order to keep my supply steady. Every man who is selling milk, is obliged to keep the most cows in the fall and winter.

Mr. S. M. Wells, of Wethersfield.—We have had very little trouble in keeping up our supply of milk in the fall. We first use corn fodder, such as has been described. After this is exhausted, we maintain the flow of milk by the use of rye, (which was sown in August, 3 bushels per acre,) with rowen hay. The rye mows a very good swath. After that we feed cotton-seed meal with steamed hay and beets. Our method is to prepare a sufficient quantity for two days supply. This requires for 40 head, about 500 lbs. of hay, 300 lbs. of corn stalks, and 200 lbs. of meal. After it is thoroughly wet and mixed it is put into a tank and steamed until corn put in with it, can be crushed in the hand. We keep the cows in the stable about 7 months of the year, turn them out in June. They are put in about the 1st of November. We do not allow the cows to go out in the winter at all.

In the morning at 5, we milk; then feed each cow with 1½ bushels of the prepared fodder. The Ayshires do not need quite so much. The cows that are in milk receive, in addition, eight quarts of mash made of rye bran and wheat shorts. When this is consumed, they get ½ bushel of roots, generally beets. At noon they are fed with the best upland hay, about seven pounds to each cow. At 4.30 P. M. they are fed with steamed fodder and bran mash as in the morning.

We are milking now about 175 to 200 quarts per day. The expense of steaming is very trifling. The cows have water in the stalls; it is a very great advantage. They drink fifteeen or twenty times a day. When a team comes in at night, they first eat their supper and then drink. The bottom of the barn is cemented, and the mangers are two feet wide, and between each two stalls is an iron box fed by a pipe. The water is brought from the sidehill through a siphon.

Q. What is the effect of constant confinement on the cows?

Mr. Wells.—It does not seem to hurt them in the least. They are in excellent health. They are curried almost every day. The ventilation is very good. The stable is above ground with plenty of light. We steam good hay now, having nothing else left. Wet it thoroughly and mix it. I have never had any trouble with the cotton-seed meal. It never hurt my cattle, though I have fed as much as six quarts a day to a cow. It takes about ¾ of an hour to steam the food. We use an engine and a small tubular boiler. Our tank is 6 feet by 7. The hay is put in from the floor above and taken out below. We have about 40 head on that floor now. One great advantage in steaming is that there is no waste whatever. If there is anything left in the mangers, we take it in the basket and put it through another steaming; so that there is no more left on the last day in the spring than there is on the first day in the fall. I think 1½ tons of hay to a cow will keep it. We feed no roots but Mangel Wurzels.

Mr. Collins. I cannot agree as to the quantity of food eaten in steaming. I have been at steaming for several years. I cannot get along with 1½ tons or anything like it. If a cow is fed properly with long hay, a good sized, new milch cow, will spoil three tons of hay, and I think my cows eat 2 tons each of steamed hay. I have fed only one or two quarts of cotton-seed meal per day to a cow. I used to try to raise roots, but I cannot get more than about 500 bushels to the acre. I can do better with carrots than with anything else. It does not pay me to raise roots to feed to cows. The cornstalks cut up and steamed are as good as hay and a little better if you want milk. The stalks will all be eaten with steaming. I have never fed roots enough to increase the quantity of milk.

Mr. Wells.—It is easy to raise 1000 bushels of mangels to the acre. I do not think that sugar beets are any more valuable than mangels.

Mr. Clift of the Agriculturist, inquired further about the water, cotton-seed meal, &c.

Mr. Wells: Water does not freeze in my barn. The thermometer would not fall below 46° above 0 there. I have purchased cotton-seed meal from different mills. I am now feeding 6 quarts to the cows which I am fatting. I once fed to a cow for milk, when I wanted a good deal of milk, six quarts of cotton-seed meal, and four quarts of corn-meal per day. The feed did not hurt her at all. She did not come out of the stall till spring, and then came out decidedly fat and frisky. She milked well the next year. I like to have my cows fat when they come in. I fed the cow so heavily because I wanted her to make butter enough for the family—and she did. We feed salt in the cut-feed.

Mr. Collins.—My cows do not seem to require salt. I put it before them and they do not eat it.

Mr. Wells.—We have a pasture whose grass furnishes all the salt the cattle want. The reason lies doubtless in the soil.

Mr. Webb.—I have no doubt that any dairyman will find it greatly to his advantage to introduce water so that it shall be continually before his stock. I have tried it as an experiment, and find that fatting cattle thrive vastly better where they can take a sip whenever they choose. As to the diminution of milk in November, I turn my cattle on to my rowen feed and find that they increase largely in milk. I generally get through with my corn fodder before the frost kills it.

Mr. Barnes, of East Haven.—I keep a few cows, which I turn out to pasture in June, and give them nothing else until the time of gathering pumpkins. I think that cows should have as good care in October and November as later. By taking good care of them when it is time for a man to have an overcoat, I believe the supply of milk may nearly be kept good. I feed ½ bushel of roots a day in winter. I have tried several kinds of grain feed, and the best I can find is corn and oats ground together equally. My method of feeding is this; in the morning the cows have a little hay when they are milked. Then they get the cut feed with the grain. They are then turned out upon salt hay, and then at noon I give them stalks. About 4 I put them into the barn and feed with turnips, and then with the cut feed, and then hay. Then before going to bed I give them a little more hay. I like to have an animal eat all it has in an hour. The oftener they are fed the better.

I never could get an animal to eat more than six quarts at a feed. I never could give more than that, without throwing the animals off their feed, and disarranging their stomachs.

Mr. Webb.—I suppose cattle will eat, with turnips, a peck of meal a day. My experience is that they will eat and digest more meal with turnips than without.

Mr. Collins.—They will eat more hay also. Roots are an excellent appetizer. This is their chief use.

Mr. William Birnie, of Springfield.—I have no doubt that roots take the place of other things and give a greater quantity of milk. I get from 1000 to 1200 bushels of mangel wurzels to the acre. I am now feeding half a bushel a day. I have cultivated cabbages for a few years with excellent success, for the purpose of keeping the cows up to their milk in November. I can discover no bad taste, and hear nothing from it. I perceive no bad result whatever. I can get fifteen to twenty tons of cabbages to the acre; more than I can get of any other root. I formerly used cotton-seed meal with the very best results, but left it off on reading of the losses of Dr. Loring. Since the testimony of Mr. Wells, I shall purchase again. My cattle are Ayrshire, thorough-breds. I raise all my calves; give them principally oil-meal; do not always scald it. I moisten it with milk at first. I do not intend to let a calf suck more than a day. I think it more humane to take it away before the mother knows much about it. They did not decorticate cotton-seed meal at first, and I think I lost a calf by it.

Mr. Collins.—I have fed a good many tons of cotton-seed meal, and never had any bad effect. Cattle will sometimes eat too much if you let them, for they are fond of it, and it is rich. Calves will eat too much oil-meal if I let them have it. They will hurt themselves with milk if you over-feed them.

Mr. David Clark.—I keep twenty head of neat stock and twenty of brood mares and colts. I have my rules for feeding though these are perhaps not always obeyed by my men. My winter process is somewhat as follows: In the morning a little hay is fed while the boys are milking; then I give cut feed, a bushel to each head. In this I give a quart of corn-meal, and two quarts of rye-meal, and perhaps they have some buckwheat meal, or perhaps the rye and the buckwheat will be ground together, with some oats to make a provender. Use about a quart of corn meal and three quarts of provender at a feed. After this they are turned out to drink, and if it is pleasant, they remain in the yard till noon. They are put back and fed with a little long hay. About 4 o'clock we take some turnips or carrots and put them through the cutting machine and give about ½ a bushel to each. At sundown, they are fed a little dry hay, and at nine o'clock again.

One way to keep up the supply of milk in the fall is to so manage as to have several of the cows come in in October or November; another way is to feed extra. [Mr. Clark gave an interesting description of his farm at Rocky Hill, and stated his experience in breeding, mainly confirmatory of the testimony already given as to the adaptability of the different breeds to different localities.]

Adjourned to 3 P. M.

Thursday, 3 P. M.

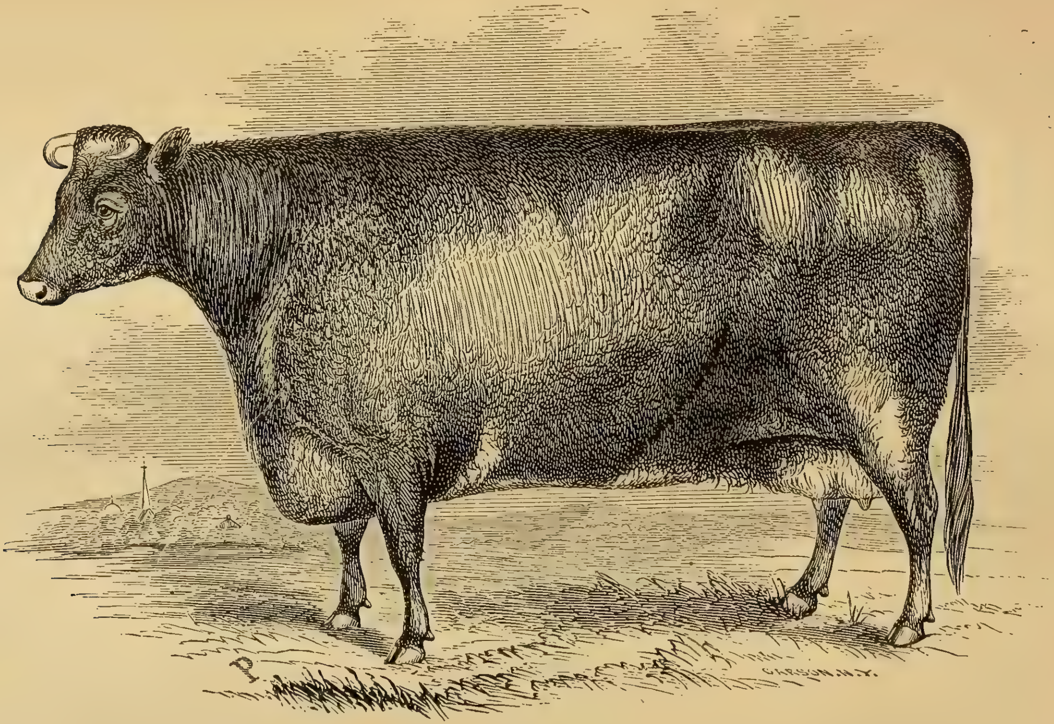
Prof. Wm. H. Brewer, of New Haven, gave a lecture on "the Possibilities and Limits of Improvement in Breeds of Cattle."

In this lecture the lecturer discussed the improvements, that have been brought about, and spoke especially of the influence of *localities* or local causes in bringing the breeds to their present condition, and on the limiting effects of local causes in respect to the profitable use of the various breeds at the present time. He held that as breeds are local in their origin, so they must be, more or less so in their uses, that much of the popular prejudice against certain improved breeds arises from the unsuccessful attempts to make a breed profitable under conditions not suited to the best use of that breed.

He considered that a high degree of perfection in several qualities could not be combined in one and the same animals and that farmers should turn their attention more to special breeds for special purposes, rather than to mongrel stock for all purposes.

Mr. J. B. Lyman, correspondent of the N. Y. World. I am reminded by the lecturer of some remarks by Professor Agassiz at a session of the Massachusetts Board. He stated that this question in breeding was in his opinion largely a geological question; that lime-stone soils were the place to raise the large breed of Short-horns; and that therefore Kentucky ought to raise Durhams on her lime-rock fields. That for our New England hills, where the soil is granite, or for our lower lands where it is generally redsand-stone, the Devons or the Ayrshires were the best. That a patient study of the face of the country would solve the question of the adaptability of breeds, and that the country might be mapped out and we should have a basis for recommending these breeds on a geological groundwork. I think there is some foundation for this view, and that the preference for breeds in particular localities would seem to confirm it. I notice that perhaps the strongest Short-horn man here lives in the valley.

Prof. Brewer.—I would not give a cent for a theory that is made in advance of facts. If we know where Short-horns actually do the best and prove the most profitable, that is the place for them. I know some of the most rugged mountains have been lime-stone mountains where the Durham cattle have not been a success. There is such a mountain within eight miles of where Agassiz was born. I doubt if you can map out a country geologically so that it will be well mapped



Short-horn Cow, "TWINKLE." Bred by S. T. Taber, Duchess Co., N. Y. The property of B. Sumner, Woodstock, Ct.
Won the first prize as the best cow, at the New England Fair, at Providence, in 1867.

for its cattle. There are undoubtedly intimate relations between these outward conditions and the different breeds. It is possible that geological limits have something to do with it, but not all—not as great, I think as is claimed. I believe that climate, vegetation, mountain and valley, and other things have more to do with it than geology, and must be closely consulted. It depends on the forage more than on the rocks. I believe as a matter of fact, that the Durhams are especially valuable in countries that are not rugged, that do not lie in a high latitude, and are rich in forage.

The following resolutions were then passed by the Board:

Resolved, That the thanks of the Board be presented to the Young Men's Christian Association for the use of their rooms, which have been so kindly furnished for the meetings of the Board.

Resolved, That the thanks of the Board be presented to David Clark, Esq., for his kindly services in securing rooms for the meetings of the Board.

The Board adjourned till 7 P. M.

EVENING SESSION.

President Hyde called the Board to order, and announced the topic:—"Neat Stock."

Secretary Gold read the following letter from Benjamin Sumner, of Woodstock, on Short-horns:

So much has been written by able authors concerning this valuable breed of cattle, in relation to their origin, introduction into this country, their merits and improvement, that anything farther on the subject seems almost superfluous; and I was not a little surprised at your application to me for an article on Short-horns, when there are so many breeders in New England who are infinitely more capable than myself to give you an interesting and instructive essay, and to render more justice to this noble breed of cattle. But agreeably with your suggestion, I shall confine myself to a brief statement of facts, the result of some twenty years experience, as regards their adaptation to the wants of the New England farmer, and in so doing I shall avoid as much as possible, except by way of illustration, all reference to any particular herd or tribe.

To claim that Short-horns are the cattle for all sections of New England, to the exclusion of all other breeds, would be nonsense. They have merits enough that justly belong to them, without borrowing any additional credit.

The Short-horn is a large and quiet animal, and requires for its full development a deep, rich soil, producing an abundance of the most nutritious grasses. They are averse to climbing steep hill-sides, and roaming over a great extent of land to gain a scanty subsistence, and should be kept where they can fill themselves quickly, and lay down quietly, and exercise their wonderful power to appropriate food to the best possible advantage. In such localities they are the most valuable breed of cattle known. I have placed so called natives, and other breeds of cattle in the same pastures with thorough-bred and high grade Short-horns, when the latter would beat the former almost two to one in the accumulation of flesh and growth. And they would lay flesh on those points where the natives and other breeds are so deficient, which fetch the best prices in market. And I have found the milking families quite as superior for dairy purposes. They excel all other breeds in early maturity, being as ripe for the butcher at two and three years old as common cattle are at five and six, which makes a saving to the breeder of some two and three years keeping.

But the New England farmer requires a *differently bred* animal from the western farmer; *there*, beef is the great object. The New England farmer cannot afford to sacrifice his milk, consequently that family of Short-horns which combines to the greatest extent the two qualities of milk and beef, (for the beef-barrel is the end of all animals,) is the most desirable for us.

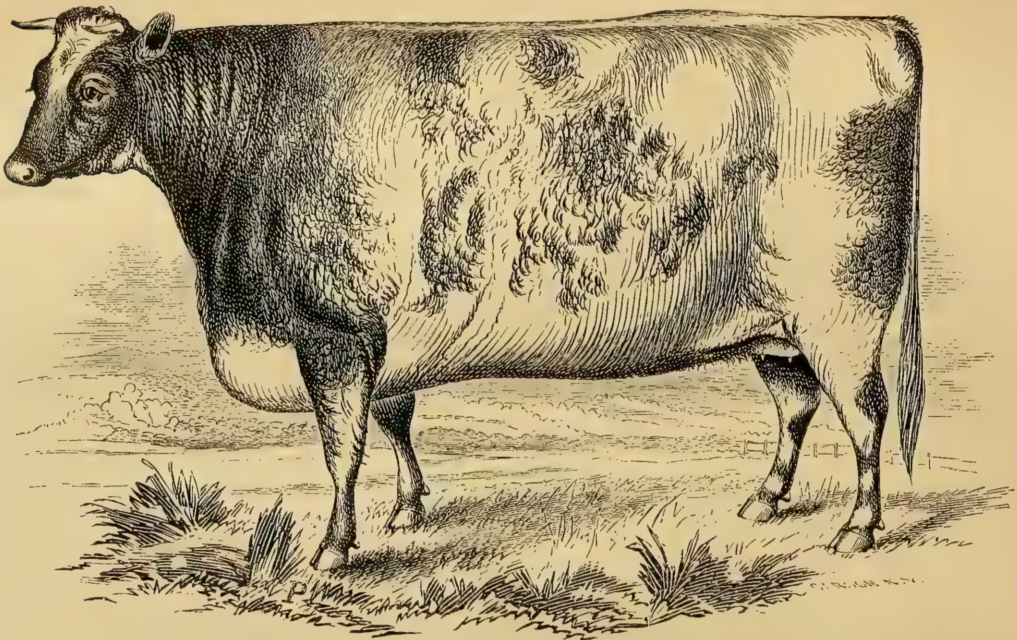
But we are told by many learned men, and I have heard this opinion expressed at some of our largest agricultural meetings, that the two qualities cannot exist in the same animal. Such does not accord with my experience. Take for instance, the cow "Pride of Autumn," ten years old, winner of the sweepstakes premium at the late New England Fair at Providence, as the best female of any age. According to the scale of points for a perfect cow, she is a model for symmetry and style. Having given milk since the previous September, she was turned to grass on May 10th, and dried off June 1st, and gained during the three following months nearly 300 lbs. And after calving, about Sept. 1st, she gave an average of twenty-two quarts of milk per day till Nov. 1st. She gained her flesh and gave her milk on *grass* alone. And this is not by any means an isolated case.

Short-horns have found a home in many parts of New England, even on soil not the richest, but by the aid of soiling and a little extra care have succeeded well, and I believe have given entire satisfaction. That their popularity is not on the wane is fully confirmed by the increasing demand for them. At no period since their introduction have prices been better or more remunerative, for *good cattle*, than now.

You wish my opinion with regard to their improvement under New England management. New England can now boast of better Short-horns than were ever before within her borders. I speak of the average. It is very true that in proportion to numbers the original importations and their descendants were superior as milkers to many now in existence here. But the Short-horn of the present day is superior in constitution and symmetry to their ancestors, particularly when crossed with the more fashionable strains of blood, such as the Dukes or Duchesses, Oxfords and Princesses, which gives them increased stamina, better size, more capacity to take on flesh, without detracting at all from their milking qualities. It is natural for Short-horns to be fleshy, particularly before dropping their first calves; and I have been greatly surprised at the decisions of our judges at some of our fairs, where young animals were condemned because they were too fat. But this is the result of ignorance in pedigrees. If those judges would study the genealogy of such animals, and find that they are descended from a long line of extraordinary milkers, both on the side of sire and dam, they might safely conclude that the offspring would resemble its ancestors. They should know that the same capacity to acquire flesh also enables them to secrete milk. I refer, of course to milking families. At our New England Fair last autumn, two of the most extraordinary heifers on exhibition, one a yearling and the other a three years old, in calf, were ruled out because they were *too fat!* These heifers would have done honor to any show in the United States. The three years old has lately dropped a calf, and is now giving 18 quarts per day. I would not encourage obesity, or extravagant feeding to produce it, neither would I condemn an animal as a milker because she was in high condition.

It is the opinion of some people that Short-horns require very extra feed in winter, and are monstrous consumers. But such is not the fact. A *good* Short-horn, when not in milk, will thrive on good hay or its equivalent. Neither do I acknowledge that they require, in proportion to their size, more food than other breeds of cattle, whilst their capacity to appropriate food to the greatest profit is decidedly in their favor. On many farms where a portion of the hay is not of the first quality, when properly fed, they do well. They enjoy an occasional feed of corn-stalks, straw, and even bog hay, when early cut and well cured, as well as any breed of cattle; and no farmer need hesitate to adopt Short-horns because he cuts a small portion of poor fodder.

I am convinced that Short-horns will be more generally bred throughout New England, not only by the farmer who breeds for profit, but by the gentleman who farms for pleasure. They are not only useful but ornamental, and to the lover of fine animals what sight can be more beautiful than a herd of magnificent Short-horns in the pasture, with their variegated colors, majestic bearing, and quiet disposition?



Short-horn Cow, "SMILE." Bred by and the property of B. Sumner, Woodstock, Ct.
"Smile" won the second prize in her class, at the late New England Fair, "Twinkle" taking the first.

Mr. Clark called attention to the inquiry concerning the origin of Short-horns, and called for an answer.

Mr. Webb.—I believe it is understood that our Durhams descended from stock found on the estate of the Duke of Northumberland, in England, about 1700. It was claimed that the breed had been on the estate several hundred years.

Mr Clark.—I supposed by the "ring-streaked and speckled" variations that they descended from Jacob's kine. I believe it is generally admitted that the Ayrshire is a cross between the Durham and the Alderney. I think the Alderney is a cross between the deer and some stunted cow.

Prof. Brewer.—Prof. Turner is now putting out a book entitled "The changes produced by domestication in plants and animals." He assumes that our domestic cattle are the descendants of quite a number of wild species, and that the traits of one of these species now return in the Devon, those of another in the Durham, another in the Ayrshire, &c. He goes on to show that the cattle of Asia, Africa, &c., are a mixture of the common stock of Europe with the native breeds of those countries. His idea is that animals of the cow kind were originally wild on all the continents. We find traces of two or three extinct species of horses and cows in this country. I have seen the skull of a horse taken from gravel diggings that date back before the settlement of Mexico.

Mr. Webb.—As to the origin of Short-horns, I would refer to the American Short-horn herd-book where the question is discussed at considerable length.

Mr. Blakeslee, of Watertown. This is the first meeting of the kind I ever attended. I came from Litchfield county, and have said nothing of any other cattle but the Devon, for that is the breed of that county. I have no doubt that the race of cattle will be more hardy and vigorous if the bull is worked than if he lies idle. [Mr. Blakeslee gave at some length an amusing account of his personal experience as a breeder, in confirmation of this position.] I generally keep a yearling bull that I do not use much, and put him to three or four cows only, the first year. In this way I get a healthy and hardy stock. I keep from forty to seventy-five head, and have not had a loss in ten years, except a couple that died of hydrophobia. In regard to using a young male, I have remarked its advantages in merino sheep. Here the wool is the main idea. I got a young buck, and it seemed as if the lambs of his first gettings were better than when the buck was older. I think the breeds are never divided. The male gives the outer coat and the muscular energy of the offspring, and the female the vital part. I had a poor bull once, and his calves were as scant and lean as he; after I got him in order, he begot plump calves. Lately I have kept a Devon bull. People bring cows of all breeds and colors, but I have never known him to get a calf that was not red. If we want to improve our stock, we must always use full-blood bulls. The female is very important, but not half so important as the male in the breeding. If we breed for work, we must get a bull that is full in the chest; if for beef, from one that is broad across the loins; if for milk, from a bull that contains the blood of a generation of good milkers. The first time I introduced a bull at the State fair, I took a fine one from the best milker I ever had. In exhibiting the animal, I spoke of his being "very fine for his milking qualities." "Milking qualities!" they repeated, with some incredulity. "Yes," I replied, and I took hold of one of the bull's little teats, and the milk flew three yards! I do not like to breed as close as to put a bull to his own calf, or his own mother. I had a ram go to his own mother, but the lamb never lived.

Mr. Wells.—Have you noticed whether a full-blood bull conveys his own qualities more surely than a native or grade?

Mr. Blakeslee.—Yes, I have no doubt that the best bull will convey the most good qualities.

Mr. Payne, of Woodstock. I concur as to the necessity of using a full-blood bull, always. I purchased several cattle of Mr. Lathrop, of South Hadley, among which was a grade bull from a full-blood Durham. I kept him for stock-getting, but I rued the day. His calves were very poor—not at all reliable. I am better pleased with the Durhams than the Devons or Alderneys.

President Hyde.—My own experience has been similar, especially confirmed by my experiment of putting my extraordinary milker, (Durham) to a high-grade Alderney. The result was a failure.

Mr. Gallup, of Plainfield. Some years ago, when the Durhams first came, I took one of my best native cows to a full-blood Durham bull. I raised the calf, and from that bull we have raised the best stock we have ever had in that part of the country. Since that time, we have crossed with Devons and others, but have never got so good milkers as those, or cattle that kept so well through the winter as those grade Durhams. I have never had a stock so mild and pleasant in disposition, and so easily trained for steers. Our grade Devons were more likely to be breachy, and when we got them trained, they needed better teamsters. For farm oxen, there is nothing that has suited me so well as grade Durhams. A pair of these is the best we have had in forty years. I never have gone into the science of measuring milk, though we have always looked for a good quality and quantity of milk, and the best milkers we have ever had have been grade Durhams.

Mr. Gold.—My experience in regard to the use of grade Devons and grade Durhams for oxen—their relative temper, habits, and the ease of breaking—is exactly the reverse of that of Mr. Gallup. I got a yoke of grade Durhams that had the peculiar wicked eye that belongs to the breed, and they were more uneasy and more breachy than the grade Devons. The latter have been kind, tractable and orderly; and as to the ease of breaking, and trustiness in the yoke with farm laborers, our grade Devons take just the place that Mr. Gallup accords to the grade Durhams.

Mr. Gallup.—The great difficulty with the Durhams is to match them, though I have always succeeded well enough. I think it requires better teamsters to drive the Devon cattle than the grade Durhams. I have never been able to get a pair of grade Devons that did not get out, or prove unruly with the hired men.

Mr. Robinson.—In behalf of Windham county I desire to stand up for the grade Durhams. My experience is similar to Mr. Gallup's. Somebody said last night that the Durhams would loll, and could not stand the heat; but I have never known so hearty and hardy cattle as my grade Durhams. We think there that the Devons are too small to work on our soil. I noticed when I attended the fair in Norwich last fall, that the plowing was done with Devons. It seemed to me there was not physical strength enough to turn the soil properly; I thought that grade Durhams would be better.

Mr. Collins.—Bulls ought to be kept pretty well. I have always worked my bulls. I believe in making a bull take care of his family. As to the feed, I make them put up with what they can get. The one we now have keeps fat on what the others leave. If you keep a bull serving cows all the time you cannot work him much, of course.

Mr. Webb.—I have always advocated working bulls; but more with the object of keeping them under control than the profit of it. I think we consult safety when we get our bulls broken, and keep them subdued under the yoke. I generally feed my bull two quarts of corn-meal a day besides what hay I feed other animals.

Dr. Riggs.—I feel certain, judging by long observation, that stock from bulls that are moderately worked is better and stronger and more active than from bulls that are shut up constantly in stables and pampered. It is the law of nature. Men and women who work, and have good food, get stronger and hardier children than those who live in indolence. My bulls at five cover a cow as quickly as at two, and simply because they are worked. The fighting cock gets stronger chickens than the dung-hill fowl that dares not fight.

It is a physiological law. What is the use of keeping a bull up in the stall, covered with fat, so that you can not see a single muscle? This is where our full-blood Durhams are going to fail, by-and-by, because they are pampered so much. Go and look at the popular bulls. They are never worked; hardly allowed to walk across the yard, except very slowly. They will hardly get good working oxen. Moderate work does not hurt any animal for procreation. No cattle should be allowed to get poor. But a bull should have especially good care, and be properly fed and exercised to keep up his animal courage and vigor, and then you will always have a good stock of calves, that will have good constitutions. I have a pair of Alderney bulls, and you would be surprised at the amount they will draw. I do not lead them with a stick attached to a ring in their noses. They are orderly for I work them. You can take a mullen stalk and drive them anywhere.

Mr. Lyman, of Fairfield County. Mr. Wells of Wethersfield gave an interesting account this morning of his mode of feeding in the winter. I would like to inquire if his method of keeping his cows shut up all winter does not tend to injure them?

Mr. Wells.—My cows never leave their stalls during the winter. It does not seem to hurt them. They are in perfect health, and have been; in fact, we think we see an improvement in their condition. They are always comfortable, and our theory is that cows do not need exercise. I do not agree with the claim that it is necessary or desirable to work a bull. We had a bull from the Duc d' Argentine. We always keep our bull in a highly pampered state; very fat, and without any exercise. His calves make excellent steers.

Mr. Collins.—It stands to reason that a bull ought to be worked if he can be worked without harm. In this way he will be more docile, and his work partly pays for his keeping. It may not be absolutely necessary for the health of the animal, but I think it is better in the long run. I fear that constant quiet might result in degeneracy after a while. As to keeping cows in a barn all winter, I suppose they will stand it, if the barn is well ventilated, like Mr. Wells's. I think it would be better for them to go out occasionally and stand in the sun.

Mr. Gallup.—It seems to me cruel and inhuman to tie cows up in stanchions, and hold their heads as if in a vise.

Mr. Moore, of Salisbury. It is undoubtedly a cruel thing to tie up an animal to a post, as I have had to myself. I would have every cow in a separate apartment, let her have her own bed-room, where she can turn around if she wishes. And they should go out sometimes.

Mr. Wells.—These elaborate quarters may do in Canada where lumber is cheap, and labor about a third what it costs here. There is another formidable objection to turning cows out into the yard; it tends to diminish the quantity of milk. Cows in a dairy must be kept as quiet as possible. A uniform quantity of milk is demanded every day. When we had a cellar under our stalls, we found that the noise and disturbance caused by our occasional removal of the manure below, diminished the milk some fifteen per cent. Cows must not be annoyed.

The President called on Mr. David Clark to close the exercises.

Mr. Clark.—This discussion has taken a very wide range, and has been very interesting and instructive to me, and more or less, I suppose, to all. I have gained much information, and must especially express my obligations to my venerable friend from Litchfield, (Mr. Blakeslee.) We have discussed the different breeds of cattle, pretty generally, if not exhaustively. Each breed has its friends here, but we have come to one conclusion—that each breed is best adapted to some localities, people, and requirements. The Short-horns are the cattle to keep where there is an abundance of food, heavy work, and a heavy beef market. In another section of the State there is no doubt that the Devons are the best and most profitable for the farmer. There is also room, and also, no doubt, a best place for the Ayrshire and the Alderney. No breed combines all the desirable qualities. We have the good points and the undesirable points; and it is now our work to supply the defects by careful, skilful and patient breeding and selection. Let us set for ourselves a higher standard of excellence than we have ever had before, and strive to attain it.

Within a very few years there has taken place among us a wonderful change in the quality of stock. I believe we have now as good cattle in Connecticut as can be found in the world. I believe we can send to Europe as good cattle as Europe can send to us. No other State excels us in the breed of horses. Yet all our stock can be infinitely improved by care. I hope no man will ever again be found using a grade bull. Let "excelsior" be our motto, and the cattle of a hundred years to come may differ from ours in excellence as widely as do our best breeds now from those of our grandfathers.

It has given me great pleasure to meet so many intelligent gentlemen here, from different parts of the State, and trust they have been so benefited and entertained as to be repaid for the trouble of coming.

PRES. HYDE.—We are under special obligations to Mr. Clark, and I would tender the thanks of the Board to him and others who have co-operated to make our sessions so pleasant.

At the close of this discussion the Board adjourned *sine die.*

T. S. GOLD, *Secretary.*

COMMUNICATIONS ON NEAT STOCK.

The following circular, arranged with the advice of the committee on essays and subjects for discussion was sent in October to persons in every town in the State, and elicited many replies.

In acknowledging the favors of my numerous correspondents, to whom we are indebted for so large a part of this volume, I would say, that while I have always preserved the substance of their communications, I have taken the liberty to condense them as much as was consistent with clearness, often omitting the introduction and excuse of unfitness for the task they had undertaken. Yet I have not allowed myself to add or subtract anything that would alter the meaning of the different writers, but present here their own ideas clothed as far as possible in their own language, that the farmers of Connecticut may here hold converse with each other on a subject so vital to their interests. Some have withheld their pens who might have done much to illustrate our subject, but we are glad to find so many who were ready to overcome the characteristic indisposition of farmers to commit their thoughts to writing, and send us a few pages of their experience. Farmers will talk farming, about land, stock, crops, manures, fruits, but how few will undertake the labor of committing their ideas to paper. This slothful habit should be corrected, and we intend in the future to make the temptation to talk through these pages so strong that few can resist it, and that the compiler will have more trouble in condensing to the limits of his pages than in expanding to fill them out.

WEST CORNWALL, CONN., Oct. 1st, 1867.

SIR:—The Connecticut Board of Agriculture, desirous to investigate the subject of NEAT STOCK, request a statement of any interesting facts relating to this department of husbandry, that they may be embraced in the next Annual Report.

Should it not be convenient for you to attend to it personally, will you place this Circular in the hands of some one in your section who will respond.

Replies may be sent to the Secretary before December 20, 1867.

Yours respectfully,

T. S. GOLD,

Sec. Conn. Board of Agriculture.

Inquiries upon Cattle.

What breeds of Cattle are most common in your section?

What breeds are most esteemed, and for what purposes are they employed?

Method of rearing calves, and feeding cattle for work, dairy, or beef?

Training of Steers and use of working oxen?

System of dairy management, with amount of produce and value?

Cost of rearing cattle, and their annual keep?

Are most of your cattle raised or bought, and from what source?

At what age are your cattle sold, and in what markets?

Give account of any remarkable animals within your knowledge, with history of their origin?

WM. H. WHITE, SOUTH WINDSOR.

Owing to the greater immediate returns in producing special farm crops very little attention is given to breeding and raising improved blood cattle. Very few pure blood cattle of any breed are kept by our farmers, the majority being a mixture of several breeds, interspersed with grade Devons, Durhams and natives, or no breed but a mixture of all. A few of our more enterprising farmers are becoming convinced of the importance and the pecuniary profit of a better grade of cattle, and are turning their attention to improving our cattle by a judicious selection of animals from which to breed; to this end a few high-grade and pure blood bulls have been introduced.

No very large herds are kept by any one of our farmers; very few keeping as many as 25 head of neat cattle on their farms. Instead of using as formerly oxen to perform most of the farm work, horses are made to take their place more extensively, although most who can do so, keep one and sometimes more yoke to assist in some portions of the team work. These consist of the above-mentioned breeds; occasionally we see the sprightly, tightly-built Devon in the team with the heavy, more slow Durham, or his grade. Large, heavy oxen are usually selected for the farm, without regard to the particular breed, so that after a short period of service on the farm they may be fed into the largest amount of beef, to go to the neighboring butcher, and thus bring the greatest amount of revenue. Many cattle are kept for the temporary purpose of feeding for a season to consume the fodder, thus securing the manure and then turning off for beef, the manure being a very important item on our farms.

Cows are kept in numbers from two or three up to ten or twelve, very few keeping as many as the larger number; these are kept more for their produce in butter than any other purpose, and are selected and bred, or raised in reference to that quality. Many of late have had their attention turned to the merits of the Alderney cow, and are introducing some with a strain of that blood, and find the product of their dairy improved in quality in proportion to the amount of blood introduced. While some of our dairies will average 200 lbs. per cow kept, the majority, so far as my information extends, will not exceed 150 lbs.; this, as prices have ruled the past season in our market, would amount to from $40 to $45 per cow. Cows are kept to grass usually from May to November, with perhaps a little fodder the latter part of the time. In winter they are kept on corn fodder and hay, and in some cases a little meal or shorts, or perhaps some green food, cabbage, pumpkins, squash, or the like. No special crop of roots is generally or often raised, although exceptions are always found to general rules; neither is there any peculiar method adopted in feeding, except to feed well night and morning, in the stall, and again at noon in the yard in fair weather, otherwise in the stall. Water is brought to the yard either from springs or streams in pipes by gravity or rams, or from wells at the yard, so that all are supplied in the yard.

My method of raising calves, which I find is very good in practice, is to let the cow and calf lie together the first 24 hours, then take the calf out of sight of the cow and tie it up and feed new milk, about two quarts twice a day for the first week, the next week give a little less new milk, and add skim milk, gradually increasing the skim milk, at the same time mixing in a little corn meal, using care not to feed too liberally of meal; after the second week give skim milk with meal and no new milk, warm enough to take off any chill.

I find no difficulty in learning calves to drink when commencing thus early with them; the first time trying introduce the two fore-fingers into the mouth and put to the milk, and gradually withdraw the fingers, holding the nose still in the milk; two or three trials in this way I have found sufficient to subdue the most stubborn case. If the grass be well started and the weather warm, let them run in a small enclosure, after they are two or three weeks old, putting them up cool nights; if no grass, give them a little rowen or other fine hay to pick at; feed the milk till three months or more of age. I find that unless calves are well kept, so as to keep them thriving for the first one or two years, that they often become stunted, from the effects of which they never recover, and also that it costs less to keep any stock in good order than when low in flesh, and to the most successful accomplishment of keeping stock thriving, good, *comfortable* quarters must be provided, especially in cold weather, and neatness, good care, and regularity in feeding be observed.

Silas N. Beers, (Sandy Hook, P. O.) Newtown.

Having had but a short half dozen years experience in the management of cattle, I cannot say positively which breeds are best, or give the best mode of management; but during the practice I have had, I have endeavored to keep my "eyes and ears open," and to gather all the knowledge I could, both by reading Agricultural works and papers, and by conversing with farmers and breeders in this and other sections.

A large portion of the cattle kept in this section are bought. Steers from two to four years of age are procured from the West and from Canada and brought on here and sold to farmers, who keep them from three to twelve months so as to get them in good condition for the butcher. They are then marketed in Bridgeport, Birmingham, New Haven and sometimes in New York; besides quite a number are needed for our own markets. This requires but little labor and with the use of Plaster of Paris as a fertilizer has brought up many farms to an excellent degree of fertility. This has been quite profitable as it has been an easy matter to realize a profit for twelve months' keeping equal to the first cost of the animal. During the war when cattle were rising in value, this profit was often attained in half of that time, but I am inclined to think that in future it will not pay so well. Western farmers have acquired more capital, and are not now obliged to sell their grain as soon as grown. They can do better by feeding it to their beeves themselves, thereby saving much on transportation, and retaining the manure, which they begin to value, at home. This with perhaps a scarcity, makes store cattle much higher than before, and if there is to be no further increase in the price of beef, but a decrease, it cannot pay so well.

Some attention is also paid to the butter dairy. Farmers here keep from one or two to six cows. The calves are not usually raised but are fatted and sold for veal, though I think more will be raised in future. My own are usually raised. A new feature in the dairy business is now opening to us, a milk train having commenced running to New York on the Housatonic Railroad. This may operate much to our advantage and enable us to secure greater profits than making butter or fattening beeves.

Steers are scarcely ever trained for work in this town, but our oxen are brought in by drovers from other sections.

The breeds of cattle common here are very nearly all what are styled natives. A few Devons have been introduced and occasionally grade Short-horns are brought in by our drovers, but neither have become much intermingled with our natives. A neighbor and myself have also quite recently introduced a few thorough-bred Short-horns, but with what effect yet remains to be proved.

From what information I have been able to obtain I have concluded to give the Durhams (or Short-horns as they are generally called,) the preference, for the improvement of our native breeds. The Devons make very good cows for butter and they also make the best of oxen, but do not attain size for beef so rapidly as some others. For producing butter where no stock is raised the Alderney would probably take the lead, and for milk the Ayrshire ; but there is something substantial about the Short-horns and by uniting the dairy with stock raising and fattening, I think that more profit may be made than from either alone. It is true that many of the Short-horns are poor milkers. They were not so originally but they have been bred for beef. Some families of them are yet good milkers, where they are kept for that purpose. I would not recommend to procure a full dairy of thoroughbreds. It would cost too much. The best native cows should be selected, and a pure blood bull used from a good milking family of Short-horns. The cross will be much more likely to produce good milkers than when natives are bred with each other indiscriminately, furnishing many very excellent ones, and those that are poor can be readily fattened and disposed of with profit to the butcher.

My method of raising calves is not to take them off the cow until they are a week or more old. They then have a good appetite and usually learn to drink much more readily than if taken off younger. I know that it is usually recommended to take them off the first day as the cow more quickly forgets them. I have tried both and my neighbor's experience coincides with my own. When taken off so young it is usually a long time before the calf will commence drinking heartily and it not only requires much more patience but retards its growth. The difficulty of separating the cow from it may be nearly obviated if a box stall can for a few days be given her, with space enough parted off on one side for the calf, the partition should be just high enough so that the cow can reach over occasionally to lick it. Or it will answer nearly as well to put the calf for a few days in a stable next to her, with openings between sufficient so that she can see him.

The feed of the calf should now be new milk until it learns to drink and drinks heartily, when warmed skimmed milk may at first be partially and at length wholly substituted for it. If there is any scarcity of milk a thin oil meal gruel can be added to good account, or can be substituted for it. They will drink twice a day from four to eight quarts at a time, according to age and other circumstances. They should also have a little hay to work at.

My calves are usually cast from the middle of February to the first of June. After the weather becomes warm and settled if they have learned to drink well they are put out into a pasture not far from the house. The feed of milk or gruel is continued at least once a day until the calf is four or five months old when if there is a plenty of good pasture it may be gradually withdrawn. As soon as the pasture gives out on the commencement of winter I give them a comfortable stable or pen at night and on extreme cold or stormy days putting from two to six together according to circumstances. They are fed on good hay and in addition they have about one pint a day each of corn and oat meal, or sometimes oil meal and bran are used. In the spring I then have thrifty yearlings of good size and in good condition. At no period either when taken off from the cow or when weaned from their milk, nor during the first winter of their existence is their growth even partially suspended. These yearlings are given good pasture during the summer and such heifers as are not desired for cows are usually butchered in the fall or early winter, and will weigh from five to six hundred each and sometimes six hundred and fifty has been attained by keeping till Christmas and feeding a little grain. The steers are wintered on good hay and grained a little towards spring. They are then given good pasture until June or July, and then when butchered weigh from seven to eight hundred pounds dressed weight. And further than this we hope now with the use of our thorough-bred Short-horn bull to raise steers that will of the age above mentioned attain the weight of nine hundred, which at the usual price of beef at this season for the last few years, which is about 14 cents, amounts to over $125. Half of this sum is a fair profit at present rates of three year olds from the West for one year's keep, without grain; and I doubt if my yearlings (which I choose to call them) will consume as much grass and hay during both years, and cost of the grain given them is merely nominal in comparison.

We cannot boast very much of the system of management of our dairy cows. After our cows come in in the spring they are usually stabled until warm weather and messed some with grain and roots. Also in the fall when winter weather commences they are again stabled and messed on cabbages, mangolds, carrots and bran or meal. There is not generally that attention paid to get the cow in good condition before she calves and to keep up the flow of milk to the utmost limit that I think there might be with profit. I have no doubt that it would pay to keep up the mess of meal in the spring as long as the grass was flashy and to stable them on stormy nights during the earlier part of the season. I also think that a plenty of corn fodder should be supplied, as soon as the pasture gets short in autumn, also that grain of some kind should be fed as soon as the grass is frost bitten and even before, if there is not an abundance of other succulent food. Our average produce of butter is now about 200 lbs. to the cow during the season, selling from 25 to 50 cents per pound.

It is thought that the tendency to secrete milk is increased by having heifers come in when young, usually when from two to two and a half years old; and they are generally milked the first season until within four or six weeks of the time of calving to insure a habit of holding out later in their milk. They should at all times have kind and gentle treatment.

CYRUS ROOT, BERLIN.

My experience has been mostly with grade Jerseys which I have bred successfully for about twelve years.

For the dairy I consider them superior to any other breed that I have tried.

They do not give so large a quantity of milk as other breeds, but it is much richer. There are some instances however where the cross of the Jerseys with the native have produced a cow that gave a large quantity of milk, and very good milk. They are a healthy hardy breed as far as my experience goes. When I kept natives there used to be very frequently cases of horn ail or some other slight ailment, but with this breed I have had nothing of the sort.

As a general thing they are quite tractable and intelligent, and for a family cow I think that one of this breed would be preferable.

THOMAS FITCH, NEW LONDON.

In answer to the 1st question, what breeds of cattle are most common in your section? Devons, full bloods and grades and natives. 2d, the breed most esteemed for working oxen is "Grade Devons," and cows for family, and dairy purposes, "Grade Alderneys." 3d, the method of raising calves, is usually to nurse their "Dams," until they are about 8 weeks old, and then wean, giving them about one quart each of Linseed meal per day and pasture. 4th, most of the farm work is done with oxen. 5th, the system of dairy management; very little cheese is manufactured in this section. With the exception of supplies of milk for city use, most farmers turn their attention to the manufacture of butter. 6th, the cost of rearing cattle and their annual keep, I am not able to inform you. With hay at $25 per ton, and grain at present high rates, compared with old prices, the cost will be very much enhanced.

7th, most of our cattle are raised here, some few are purchased from drovers who obtain their cattle from northern New York. 8th, the age at which most working oxen are sold is from 4 to 7 years, to parties from the western part of Connecticut and eastern New York, and at 8 to 10 years old for slaughter. Here many extra fine Grade Alderney cows are disposed of to parties in the city of New York and Brooklyn and Westchester County, at fair rates, say $150 to $250 each. 9th, in giving you a history of any remarkable animals within my knowledge and their origin, I will relate my own experience in the crossing of two breeds of thorough-bred stock, viz: the "Alderneys" with the "Ayrshires." I have now a three year old bull of this cross, that took the premium at the New Jersey State Fair last October, (where competition was invited from all the states) he is a mouse color with some few white spots, his form perfect in beauty and symmetry, his coat as fine and glossy as any blooded horse, weighed last fall 1480 lbs., was never grained to any extent, he has sired over sixty calves, the dams of his stock being of almost every conceivable breed and color, and what is remarkable, *all* his calves are of his *own peculiar color*, and promise to be very fine, some of the heifers will calve next summer when their qualities will be better proved. I am fully convinced that the cross of these two breeds, produces the very best family or dairy cows, in this, or any other country. The Ayrshires are good size, hardy, and naturally good milkers. The Alderneys, yield the richest milk and produce the finest butter, and when the two bloods are united the product is a good sized, hardy, beautifully formed cow with usually a large flow of very rich milk, and as I believe a more valuable cow than either of the pure-breeds. I have several two year old heifers of this cross, that last June made two pounds of splendid butter per day, for several consecutive days, on good pasture and two quarts of linseed meal per day ; 7 qts. of their milk making 1 pound and over of butter. The cross also makes fine working oxen. I know of one pair now owned at the quarry at Millston, a few miles from here, that weigh 3570 lbs., and are splendid workers, which were raised by Deacon Gilbert Rogers, of Waterford. In breeding this stock I prefer to cross with a full blood Alderney bull. It is a singular fact, that the Alderney bull, always imparts to the female of whatever breed he begets, that *peculiar rich milking strain.* I have never yet seen or heard of a half blood Alderney cow, that did not give a better and richer quality of milk or butter than the average of any other breed, and I have crossed them with the Short-horns, Devons, Herefords, Natives, Madagascars, and Ayrshires, but the best result has always come from the cross with Ayrshires.

Below I give you an extract from the report of the *committee on grade stock*, exhibited by me at the New England Fair, at Providence, Sept. 7th, 1867.

" Prominent among them were the cross of thorough-bred 'Jerseys,' with thorough-bred 'Ayrshires,' giving hardiness and constitution to the Jersey, and udder and teat development to the Ayrshire, with a uniformity of color, symmetry and yellow softness of skin, truly admirable, and a cross which we recommend for village families and those to whom *quality and quantity* of milk is the prime test."

Edward Dexter, Killingly.

Very little attention is given to select breeds of cattle in this vicinity, most of the stock being native, or a cross of the native with Devon, Durham, and Alderney. The latter have been introduced quite lately, and are thought to excel in the quality of the milk, and consequent profit to the dairy; they are not very common, yet, however.

Concerning the rearing of calves, I am in the habit of keeping my early calves on the cow eight or ten weeks, giving them nearly all the milk; this gives them a good start, and I think makes better stock. Others take them from the cow at two or three days, and feed them with milk, new or skimmed, sometimes adding a little meal. Both of these ways are practiced, but I prefer the former. The late calves are generally fattened for veal.

Cattle for general work on the farm, or dairy, are fed upon hay, corn fodder, &c.; for beef, meal would be added—in the fall pumpkins and roots.

The usual method of training steers is to break them at about two years of age, by accustoming them gradually to the yoke, and driving with older cattle. Occasionally we see a pair trained when calves, and brought into work without any other breaking.

Working oxen are kept mostly for farm work, teaming being done by horses and mules.

The dairy in this section is generally or always under the supervision of the females at the farm-house. There are no factories to do the work. An attempt was made at Brooklyn to raise a company for the purpose of building and putting into operation a cheese factory, but it was a failure; so at present it is all done at home. The larger farmers make cheese during the warm months of summer, and butter in the spring and fall. Prices this season have varied—of butter from thirty-five to fifty cents, and cheese from twelve to eighteen cents per pound. I bought good cheese in October for thirteen cents.

Your sixth query is concerning the cost of raising and keeping cattle. I believe it is generally acknowledged by our farmers, those who have had most experience in the matter, that there is more profit in buying stock than raising it. I have made an estimate as nearly as I could of the expense of raising at the present prices of hay, pasturing, &c., and find it would cost fifteen dollars to keep a calf the first year, twenty dollars the second year, and after that fifty dollars, the heifer having become a cow, and produced her first calf, as is usual at that age.

Our cattle are raised at home mostly. Those brought in are generally for beef, and come from the north and west. Our young beef are driven to the slaughter at two and three years of age, older beef at eight and upwards, and are chiefly for the home markets. We have quite a population of consumers; I find within a circuit of about fifteen miles, seventeen factories, twelve of them cotton, and five woolen. These villages make an excellent market for all our farm and dairy produce.

Whitney Elliot, North Haven.

Native cattle are the most common, and little attention is paid to breeds. Calves are generally sold while young. Horses are more generally used than oxen for work. Some butter is made, and milk is sold in New Haven. Our cattle are mostly bought from droves, and are sold at all ages for home consumption.

L. P. Gager, Coventry.

Native breeds are most common here. The Short-horn is most esteemed for beef, the Devon for work, and the Alderney for the dairy, though the natives predominate in numbers.

Calves are generally taken from the cows and fed. Beef is principally fattened on grass. Steers are commonly broken when two or three years old. Oxen are used principally for farm work.

About half the cattle are raised here, the rest are driven in from the north. Most of the beef is sold at two or three years old, in the home market.

John Dimon, Pomfret.

1st. The most common cattle here in Pomfret are grades of Durham and Ayrshire.

2d. Ayrshires for the dairy, and Devons and Devon grades for the yoke, are the most esteemed with us.

3d. Our method of rearing calves is to learn them to drink new milk at two or three days old, then to drink porridge and skim milk, and to eat oats, oil meal, and hay. We feed working cattle on hay, with occasionally a little meal. Dairy cows are usually fed on the products of the farm,—grass, hay and corn fodder, without much grain. We depend mostly on corn meal for making beef.

4th. We have some of the best working oxen in Pomfret that I have seen anywhere, but usually they are not so well trained as the cattle of Worcester County, Mass., and some others. In fact, our farmers do not have the time and patience to thoroughly train their cattle.

5th. Dairy management is divided into two classes, viz., cheese dairies and butter dairies. There are no cheese factories in this county, and cheese is made here in Pomfret by hand, same as fifty years ago, and all the cream goes into the cheese. Pomfret is noted for excellent cheese and butter; I cannot give the amount of produce or value.

6th. Cost of rearing and annual keep of cattle, I cannot answer.

7th. We buy rather more cattle than we raise. We buy young cattle of drovers from Vermont and northern New York.

8th. We sell cattle for beef at all ages, from two and a half years old to ten years. They are usually consumed here in our factory villages.

9th. The best and largest collection of thorough-bred cattle in this town or county at this time, is owned by myself on my stock farm in Pomfret, and consists of Devons, Ayrshires and Jerseys, and number in all about thirty head of thorough-bred animals, some of which are very fine.

EDWARD J. TAYLOR, WESTPORT.

On account of the very high price of land, and the small size of most of our farms, but very little attention is given to the raising of cattle. But very little butter is made for market, not enough, in fact, to supply our own villages through the season. Our cows are nearly all the old-fashioned native red breed, although there has been some little crossing with the Ayrshire and the Short-horn, and always with marked improvement in the stock.

My brother and self were at one time (some ten years since,) quite largely engaged in the production of milk for the New York market, but gave it up on account of the greater profit in the cultivation of onions and fruits. We kept some twenty-five cows, and at the prices then realized, (say two cents per quart in summer, and three and a half cents in winter,) for our milk, we could make our dairy average $60 per cow, gross receipts. As prices are now very much higher, the amount received would be greater, but the profits would not probably be much more. We were bound by our contract to supply one-half the quantity in winter that we did in summer, and this we could do only by feeding heavily with grain. We found either good wheat feed, or buckwheat ground without taking out the flour, to be the best for the production of milk, while corn meal or oil cake were decidedly best for fattening. After a variety of experiments, we made up our minds that there was not much gained in cutting the hay, and that it was quite as well to feed the hay and grain separately. We fed the grain, whatever it might be, wet up with a half pail of water in a tight box. We had good strong boxes made, one for each cow, which were taken from the manger when the cow had finished eating. They were thus always clean, and always ready for use. We found it (and most of our farmers still do so,) cheaper to buy than to raise our cows.

We use oxen quite generally on our farms, but they are nearly all raised in the eastern or northern part of the State, and driven here in droves for sale. We prefer for workers the Devons, but it is so hard to find a really good pair of oxen, that when we think we see them we do not inquire the breed. It is quite common among us to fatten our old oxen, but unless beef is very high we find it necessary to credit the animal with a pretty large sum for manure in order to figure any profit.

W. S. Standish, Lebanon.

Native stock are most common in this town, which is wholly agricultural. About enough are raised each year to supply the place of those turned off for beef. There is little improvement in cattle, as our farmers follow in the steps of their fathers before them, and little pains are taken to introduce improved breeds. In the society of Goshen, Devons, with their grades are common. There are a few grade Alderneys, perhaps one in ten, kept in dairies to give color to the butter. The Devons are mostly kept for raising our working oxen, which are very superior.

Our method of rearing calves is to take them from the cow when about three days old, and feed them mostly on skimmed milk and meal. They look as well or better than when raised on the cow.

Beef is mostly grass fed. Oxen are turned off for beef from six to ten years old. In autumn, cows are fed on sowed corn, some on wheat shorts and buckwheat bran.

Our method of training steers is by placing them behind the old cattle, and teaching them to work in this way.

Our system of dairy management is handed down from the old school. The milk room is located in the coolest part of the house, and away from the business section, in order that the milk may not be disturbed. The cream is churned once in twenty-four hours. The butter realized usually amounts to six or eight pounds per week for each cow. We usually keep ten or twelve cows and a yoke of oxen, with young stock enough to maintain the number of the herd. Also a few sheep.

We buy few cattle in this section, but raise most of our stock. The surplus finds a market at Norwich.

W. J. Starr, New Milford.

First, in relation to what breeds of cattle are most common in this section. If your inquiry is limited to such as are raised here, we answer, Devon grades predominate; a large proportion of the stock raised partake more or less of the Devon blood. We have no herd of full-bloods, though there are a few scattered among our farmers.

The breeds most esteemed are for working oxen the Devon grades, these being decidedly preferable for the yoke, and the cows for the dairy are in advance of any others among our farmers, though we are not in competition with the Ayrshire or Alderney. Though the full-blood Devons do not attain at an early age weight of carcass equal to the Durhams, yet they thrive far better on our hill pastures than the larger breeds, and are matured at a less cost. These are raised principally for working purposes, and attain at maturity the live weight of forty to forty-two hundred pounds a pair. The cows as well as the oxen of this breed are noted for sprightliness and docility, and so far no others have attained such an eminence as to supplant them.

The usual method of rearing calves is to separate them from the mother at a few days old, feed with new milk from one to two weeks, after which gradually substitute skimmed for new milk, with the addition of a handful of oat meal per day, increasing the quantity with the growth of the calf, for from twelve to sixteen weeks, when they are put in fresh pasture, and the usual feed gradually withdrawn.

In feeding cattle for work, it is usual when not supplied with full pasture, to feed in addition to a full supply of hay, from four to six quarts of oats per day, or its equivalent in meal upon cut feed.

For the dairy it is not customary to add in the summer anything to a full supply of grass, although some farmers who yard their cows at night provide them with all the hay they will consume during the year, and in the winter and spring with a feed of meal each day.

For beef, (except such as are at the age of two years past, some of which are fatted on grass only,) the usual method is with steers three and four years old, to keep them through the winter on hay, till about the first of March, when, if desirable to fit them for an early market, they are stabled and fed from four to six quarts of meal per day, till the season of a full supply of pasture; these find a market in June or July, while others who omit the extra feed in the spring months are obliged to wait the fall market before their stock becomes fit for the shambles.

Training of steers has become an art which has added much to the value of oxen for the yoke, and is begun at an early age, with occasional lessons, until they arrive, at the age of three and four years, to a state of great perfection, and are held at higher prices than they would command if fatted for the butcher. The labor of the farm in this section is principally done with oxen, which when properly trained and fed are at least equal on the plow or the cart with a load upon the farm, to a team of horses, and are by a majority preferred.

The dairy products here are from small dairies, and in no case a specialty, being only the excess from a few cows over the requirements of the family. Both cheese and butter are brought here from the factories, and creameries of the west for the trade of the grocer, as well as a winter supply for many families. Of the amount and value produced here, I have no data to enable me to make an estimate.

The cost of raising cattle may be estimated at from $15 to $20 for the first year, $20 to $30 the second, and $30 to $40 the third, depending of course, on the amount of feed and the object to be attained.

The cattle from which most farms are stocked for the purpose of fattening are procured from the west, and are a source of much greater profit to the drover who supplies them to the farmer, than to the farmer who fattens them, the middle men, as in a majority of cases, pocketing what should be the profit of the farmer. These are usually sold at the age of three and four years, the smaller finding a market at New Haven and Hartford, and towns adjacent, while the heavier steers and oxen are sent to New York.

S. Griswold, Torringford.

The most common cattle in this section are Devons and Durhams, principally grade Devons. These latter are most esteemed both for oxen and cows.

Calves are raised mostly on skimmed milk.

Steers are broken to the yoke at one or two years. Oxen are used for all farm work and moving heavy loads.

Our dairies produce three or four hundred pounds of cheese and seventy-five pounds of butter per cow.

Cows are kept for one dollar per week in winter and forty cents in summer.

Most of our cattle are raised here. Oxen are sold at the age of four or five years; cows if good are kept till their teeth fail.

Dwight L. Williams, Hartland.

The breeds of cattle most common in this section are a cross of the Devon with the native stock. These are more highly esteemed as being hardy and best adapted to this mountainous and somewhat sterile region. They are employed mostly for the dairy and work on the farm. The method most common in raising calves is by feeding with milk for the first four weeks and then with whey and scalded meal in the morning and scalded whey at night, wean when eight or ten weeks old. Cattle for work or the dairy are mostly fed on hay, very few feed meal at the present high prices. Farmers usually commence training their steers in the winter before they are three years old—when they are yoked to stand a while in the barn yard, perhaps a half a day, and sometimes longer, when they are placed in the team for two or three days, and then they are put to the lead in a snow-path. I regret to say that we have but few adepts in the business here, for I regard that man be he young or old, black or white, who has acquired the art of rendering animals docile and obedient to his will as a benefactor to the age in which he lives. Oxen are used exclusively for work on the farm. Dairying is done in families in the old way familiar to most people.

I suppose that the average product of a cow to be about as follows,

calf at six weeks old, - - -	$9.00
Two hundred and twenty-five lbs. cheese, at 12 cts.,	27.00
Thirty lbs. butter, at 37 cts. per lb., - -	11.20
	$47.00

Cost of raising cattle and their keep to three years old, thirty to forty dollars according to the value of hay.

Most of our cattle are raised.

Young cattle are sold for beef the fall after they are two years old, at the nearest village markets. Oxen are sold from five to seven years old.

J. M. HUBBARD, MIDDLETOWN.

The most common cattle here are the "native," with some admixture of "Devon and Durham" blood.

The Devon grades are most esteemed, the beef being finer grained, and the animals compact, hardy and of early maturity. They are especially valuable as working oxen.

Calves are usually weaned at three days old, and raised on skim-milk, enriched with gruel made of various ingredients, according to the judgment of the raiser. Corn-meal is commonly used but is likely to give calves the scours, in which case wheat, rye or buckwheat flour is substituted.

Neat Stock are always pastured during the summer, feeding being only resorted to when animals are worked very hard, or in some cases to increase the product of a dairy. In uch cases a little meal is usually fed. In winter our stock is mainly fed on hay, varied with roots and meal for fattening animals.

Oxen are almost exclusively used for farm work and besides do a great deal of hauling on the road. Steers are usually accustomed to the yoke at two years old, and when first used are placed between two yoke of oxen on some plain straight road, and as they become familiar with their business they are placed in other positions till fully trained.

There is no system of dairy management, as with nearly all our farmers dairying is only an incidental matter. A few cows are kept which supply milk and butter for the family, and something of a surplus for market. I can give no reliable statement of produce or value.

Quite a good many young cattle are brought in each fall from Canada and northeastern New York, yet I think the majority are raised here.

Cattle designated only for beef are sold at three or four years old. Our own immediate vicinity furnishes a market for all and more than all the beef we can produce.

Working oxen are sometimes bought up by drovers and taken wherever there is a demand for them, generally in the neighborhood of New York City.

The above remarks must be taken as only applying to this immediate vicinity, comprising the southern portion of the town of Middletown and the adjacent portions of the town of Durham.

F. E. Chadwick, Salem.

Stock raising in this vicinity has no special object or aim. Most of the stock consists of what is termed the old native breed and is raised merely as an adjunct to other branches of farming; and is therefore not made a specialty. The people are not alive to the importance of rearing improved stock and as a consequence, plod on in the old path.

The farmer takes two things into consideration regarding the disposition of his calves. First. The amount of stock on hand, and second, the price per pound the butcher will pay for them when fattened.

Unless veal brings a very high price or he is over stocked, he raises about the same number that he puts off in the course of the year. Those which he intends for the butcher are allowed a cows milk, while those he is to raise are either given half of a cows milk or brought up by "hand" giving them the needed amount of skimmed milk with the addition of enough meal, rye or buckwheat flour, (the two last are preferred) to keep them in a thrifty condition. The former is the method generally practiced unless butter brings a very remunerative price and even then a large portion of the farmers adopt it, inasmuch as the calves will not thrive as well when fed and it makes more work to feed them.

Those fattened are usually sold at about six weeks old, unless veal is very plenty when they are often kept four weeks longer.

Those raised are allowed to run till two years old, when the steers are usually broken into work, if they are considered suitable. Those that are unfit for working oxen are usually turned off together with the inferior heifers at about two years old for early beef. The working oxen are disposed of in various ways at different ages. A number of pair are annually sold to speculators to go west of the Connecticut River, and the remainder kept till from six to eight years old and fattened for beef. The heifers usually "come in" at three years old, and are kept for dairy purposes till from ten to twelve years, and sometimes even older—if good milkers. The beef is nearly or quite all sold to go to Norwich or New London.

Calvin D. Williams, Pomfret Landing.

Our cattle are about equally divided between Native, Ayrshire and Durham for cows, and Devons for oxen.

Breeds most esteemed are grade Ayrshire and Durham for dairy and Devons for working oxen.

Calves are taught to drink at a week or ten days old, and fed on new milk for a month or six weeks, and then fed on skim-milk or whey porridge until two or three months old.

Our cattle are fed on hay and grass for the most part, until fed for beef.

Oxen are used for farming purposes. About two thirds of the milk is made into cheese with an average of 300 lbs. to the cow, at 16 cts. per lb., $48.00.

One third made into butter, 150 lbs. to the cow, 35 cts. per lb., the average price for the last season, $52.50.

Cost of rearing and keeping cattle varies with different farmers, so much that no correct estimate can be made.

As the attention of most of the farmers is turned to the dairy the cows are mostly raised, but the oxen are bought for the most part from Massachusetts or farther north. Devons are preferred for working cattle.

Oxen and cows are not sold as long as they are of service for work or the dairy, after which they are fed and sold to supply in part our neighboring villages.

The age at which our cattle are turned to beef is, oxen at about ten years old and cows at from twelve to fifteen.

E. W. Keeler, Ridgefield.

Most of the improved cattle in this section are Grade Devons. They are mostly brought from the northern part of the state and are much esteemed for working oxen. They are purchased at the age of four or five years and kept until eight or ten when they are fattened for New York market.

A majority of the best cows are in the hands of milkmen who purchase them without regard to breed, paying attention only to their milking qualities.

They comprise some fine Grade Durham, and Devon's. I am not aware that any satisfactory experiments have been made to ascertain what breed is most likely to produce good milkers.

Working oxen are mostly kept in good condition upon hay and grass, but many farmers feed oats or corn meal for a month or two in spring. Cows kept for butter go dry in winter and are fed with hay or straw and in some cases a few roots. Cows kept for the milk business are more liberally dealt with. They are kept in warm stables and fed abundantly with early cut hay, wheat bran, brewers grains, roots or meal of corn, oats or buckwheat. It is considered important to feed some meal with wheat bran or roots to keep the cows from becoming too thin.

The milk is kept in tin cans holding thirty or forty quarts; these are set in reservoirs of water through which a stream from a spring is constantly flowing. In hot weather the milk is stirred until cool.

The present prices are about 4 cents per quart in summer and six in winter. A good dairy should yield $100 annually per cow; more may be realized by extra feed and management.

Cows for this purpose mostly come in in October or November, and more milk is made in winter than summer. Calves are either killed when three days old or kept until four or five weeks old and sent to New York according as the price of veal compares with that of milk. Very few are reared.

I feel considerable interest in your report, as much information is needed in this section with regard to breeding and management of Neat Stock.

FREDERICK JOURDAN, BRANFORD.

The most common cattle in this section, are the Natives; crossed mostly with Short-horns. There were some pure Devons, Ayrshires, and Alderneys, cows, heifers and bulls, purchased last fall, but I am unable to-day to decide upon their respective merits. I believe that our Native stock are the most esteemed; perhaps from the fact, that we have not shown the necessary enterprise, in testing all the best breeds.

The oxen are employed principally on the farm.

The old unprofitable way of rearing calves, turning them out and letting them run with their dams is abandoned, and a better system adopted; which consists of milking the cow and giving the calf for the first two or three weeks new milk and after that skimmed milk for a period from 6 to 10 weeks longer.

There are very few calves raised here as we are near a good market, (New Haven) and sell them at four or five weeks old to the butcher, at a price from nine to twelve cents a lb., live weight.

Very few oxen fatted for beef.

The training of steers is simply to yoke them up in a yard by themselves for several successive days, and afterwards put them in a team between two older pairs.

The dairy business is only carried on for the purpose of making butter for our own use. During the winter months a considerable quantity of milk is sent to New Haven.

We have a limited range of pasture, and find it therefore more profitable to raise hay, corn and potatoes.

My own cows yielded the last year an income of a trifle over eighty dollars apiece, exclusive of keeping.

Cost of rearing cattle depends wholly on the quantity and value of the land a man owns. That, in my opinion profitable system of soiling, is here not in practice; therefore cattle are turned out in the summer, and during the winter kept mostly on salt hay and corn stalks.

The cost of keeping a calf up to one year old, may amount to twenty dollars, and after that may increase to thirty. The most of our cattle are bought. Some from the eastern part of the state, some from New York state. We have no particular time or place for selling our cattle. Two year olds and farrow cows are often fatted on grass and sold to the butcher. A few of our oxen are sold the latter part of winter, and driven westerly.

T. B. Wakeman, Westport.

The "Native" breed of cattle are most common in this part of the state, yet there are quite a number of thoroughbred animals. Of these, Morris Ketchum of this town has the largest herd. Mr. Spooner, of Bridgeport also has quite a number.

We think the native breed is about as profitable for us common farmers as any; if we only take pains and select the calves and only keep the best ones, and always cross the breed. There is not so much attention paid to raising cattle in this part of the county as there ought to be. We live so near New York and have so fine a market for our hay, that most farmers sell their calves and buy western cattle.

Most farmers allow the calves which they raise to suck the cow for two months.

Our working oxen are fed on good hay in the winter and pasture in the summer, but cattle will do more hard work kept on good hay all through the year.

But few steers are trained in this part of the state, most of our working oxen coming from thirty or forty miles north or east of us.

There is not butter enough made for use in this part of the county by more than one-half, and very little if any cheese.

The most of us think it is better for us to sell our calves when six weeks old at from ten to fifteen dollars and buy what few store cattle we want.

Some think it costs double to raise a steer to two years old that it would to buy one. So we buy them. Our store cattle come mostly from the west, working oxen, east and west. Store cattle are kept one year and then fattened.

We keep our working oxen till they are eight or ten years old and then fatten them. These and the young beeves are mostly sold to the butchers unless they are extra nice and then they must go to New York.

Amasa Morse, Union.

The town of Union is a very hard town for the business of Agriculture. And while most of the people of the town farm it some, yet few of them follow it as a sole business. There is but little manufacturing done in the town, yet it is surrounded with manufacturing villages. The town itself has a generous supply of wood and timber which finds a ready market at the villages around, so that agriculture with many at least is a secondary business. Most of the inhabitants make their own butter and cheese, few of them make much to sell.

Those who make to sell find a ready market at the villages around. The stock is mostly native. Cows are kept to make butter and cheese, oxen to haul wood and timber to market.

Few cattle are raised but most are bought from surrounding towns and from droves that come along from York State, Vermont and elsewhere. What beef we make to sell is purchased by the butchers of the villages around.

The calves that are raised are generally taught to drink and are allowed to have milk for a month or two and then something else for a short time, and then are turned out to pasture, consequently they make rather ordinary cattle. A few are taking some pains to raise nice cattle, and generally we prefer Devon stock for this hard place, considering them a hardy race of cattle. Or we more generally procure a full blood Devon bull and put with our native cows from which we raise some very good stock.

Of course those who are trying to raise nice stock take more pains with their calves and consequently raise better stock.

F. A. Rockwell, Ridgefield.

Natives crossed with Durhams and Devons are the most common cattle. Devons are mostly esteemed for working oxen. Few calves are raised as they are mostly sold for veal. Oxen are only used for farm work.

Milk is mostly sold in New York at an average of about five cents per quart. Stock for fattening are bought mostly from the west, working oxen from the north and east. Fat oxen are sent to New York, but the home market consumes the young animals.

A. Moore, Salisbury.

Our cattle are mostly natives with a slight sprinkling of Devon and Durham. The Durhams are most esteemed for fattening and for milk, the Devons for working oxen.

Calves are taught to drink milk when one or two days old. At a week old a teaspoonful of corn meal is put into each mess and gradually increased till they can live on grass.

Working cattle are pastured in summer and in winter fed on hay, oats or provender. Dairy cows in winter and early spring are fed on hay and oats or provender, in summer pasture and rowen, in autumn and early winter on sowed corn, roots, pumpkins and hay.

Steers are trained by being handled and trained when calves, and at five or six months of age they are yoked together in a small yard frequently and driven about for a short time, taught to stop and start, to haw, gee and back, by being spoken to with the proper words, and slightly touched with the whip. Working oxen are used for common farm work and in the coal bushes.

Cheese is made in the warmest weather in our dairies, and butter when it is cooler. A table spoonful of fine salt to each quart of cream as soon as skimmed materially shortens the operation of churning.

The amount of cheese made in town is about twenty tons, valued at $4,800. Of butter twenty tons, at a value of $12,000.

The cost of raising young cattle amounts to about three-fourths of their worth when sold. The annual keeping of a cow or an ox is from twenty-five to forty dollars.

Most of our cattle are bought of drovers, being brought from Vermont, northern and western New York, or farther west and some from Massachusetts.

Veal calves, oxen and cows when fattened find a market in New York City.

I think the Guenon discovery (made by a person of that name in France) in relation to cows is not sufficiently appreciated. Even bulls show what the milking properties of their progeny will be, and if put with cows showing the same developments and the system continued for a term of years, constantly breeding from bulls and cows showing their points most fully, it is almost certain that a higher standard of milking cows would be reached than has yet been attained. Also from my own observation I think that both heifers and cows, and steers and oxen which show the least of this development are the most inclined to be fleshy, and by breeding from such, an equally high standard of cattle for fatting may be reached with certainty. I think steers for work will be better from those showing the milking than the fattening developments. The milking qualities and the opposite can be discovered in all calves when only a few days old, and at all other times during their lives.

E. C. Holmes, West Winsted.

The majority of farmers in this section are dairymen and pay little attention to improvements in breeds of cattle or even of their own stock, most of them studying how they can get the most money from their farms and stock with the least possible outlay, seeming to think that every dollar paid for improvement in stock or buildings or land so much lost. If our farmers could learn that stock and land well cared for are most profitable, they would learn a good lesson.

The more common method of raising stock here is to keep them in just a living condition and have them begin to pay as soon as possible. They give new or skimmed milk a few days, then skimmed milk till they begin to make cheese, then feed whey, and when grass is gone hay is good enough. The common method of feeding for the dairy is to keep all the cows that will live on their pastures, and to confine them to pasture as long as the ground is bare with the exception of a few weeks in rowen feed, and feed nothing but hay and stalks in the barn. Whereas, if they would raise corn or some other green crop to feed when grass begins to fail and roots to feed in winter, with some grain raised or bought, their stock would show it in their increase in milk and flesh, and their land from the increase in quantity and quality of the manure. My opinion is that a cow will pay for good keeping either in flesh or milk.

Most of those who have turned their attention to improving stock, think that Grade Durham and Devons are better for milk than thorough-breds.

GEO. OSBORNE, REDDING RIDGE.

We have a mixture of all sorts of cattle, but none thorough-bred.

Durham grades are most esteemed by our best farmers, though Devon grades are highly prized by many. They are mostly employed for fattening. Most of our calves are sold for veal at from six to eight weeks old, very few being raised in this town.

My practice in feeding cattle for work, dairy or beef, is to give them the best the farm affords and all they will eat.

No steers are broke in town. Farm work is mostly done with oxen, except mowing which is done with horses.

Very little is done in the dairy department. Nearly all our cattle are bought, most of them coming from the west and Canada.

Cattle are marketed mostly at two or three years old. The heavier ones are sold at New Haven, Bridgeport and Norwalk, and the lighter ones in our own villages.

CHAUNCEY E. BALDWIN, W. CORNWALL.

The most common breed of Blood stock in this section, is the Devon. There are some thorough-breds but most of our stock are grades. We find in our experience with different breeds that the Devons are the best to work, the most intelligent, kind and docile, if properly managed, have more endurance and are easier kept than any other class of cattle. They make the most beautiful oxen, the cows are generally good milkers, and the only difficulty with the beef is that it does not weigh enough. But I saw a pair of Devon oxen a few days since, that were raised by D. L. Rogers, of N. Cornwall and now owned by A. A. Hotchkiss of Sharon, that have only been fed for market two months and now weigh thirty eight hundred pounds. Beautiful in form, with coats silky to the touch, and flesh delicious to think of, they command a good price. He has been offered three hundred and eighty dollars and expects to get four hundred.

At our Union Fair, T. S. Gold exhibited five pairs of Devon grade steers, four of which he raised, just as fine to look upon as pure bloods, but having just enough Short-horn blood to give them more size and bone. Cattle crossed in this way make oxen that will weigh when six or seven years old from three to four hundred pounds more than pure Devons.

The best pair of steers ever raised in this section were bred from a Durham bull of George C. Hitchcock's stock, and our Devon grade stock. They were closely matched, had fine Devon horns, color, disposition, intelligence, and endurance and weighed when six years old four thousand pounds.

Many of our calves are fatted for the New York Market and go off at six or eight weeks old.

The old style of bringing up calves was to feed them first with new milk, soon passing to skimmed milk, then sour and next whey, and they would grow as a crab walks, backwards, with backs in the shape of a rainbow, with a fair chance that a large proportion of them would die under the treatment, and if they lived it would take all summer to get them growing again. A better and cheaper way of raising them is to feed a fair quantity of new milk till they are eight or ten weeks old and can get good grass. We have them then, straight and nice and in a proper state to grow. Calves fed in this way cost ten or fifteen dollars when ready to turn off.

Our method of feeding oxen for work in the spring, is to commence feeding a little grain about the first of February and occasionally during the hot days of April and May add a mess of potatoes, and when it is time to turn out to pasture the old hair is gone and they will continue to shine through the summer. In drawing in hay, give them all they want to eat, it makes them feel quiet and contented, makes them thrifty and in the fall they are ready for another season's growth or the New York market, just as you choose.

In training steers, we usually take them when coming three years old. If they are wild and not much used to being handled, we put them in the yard and treat them very gently until we can pat them and at last get the yoke on them, and then of course they will try the strength of the yoke by jumping and twisting around. Wreath up the bows so that they can't turn the yoke and let them jump. After they give that up and are quiet we begin driving them across the yard backwards and forwards until they become accustomed to the yoke. We then put them behind a steady pair of oxen, and drive around. If the steers hang back, stop the oxen and do not draw them by the head, until the steers start again. When they get so that they will walk promptly behind the oxen they are ready for work, keeping the steers behind and allowing them to have their own way pretty much, and never loading so heavy but that the oxen can walk right along and you will find the steers helping before you know it. Change them from one side to the other till you are satisfied which way they work the best then break them in that way, keeping them behind the oxen till they are broken well enough to drive on the lead without trouble. Thus you save much whipping and the steers learn faster than in any other way, and besides there is no chance for them to have any tricks or to get the advantage.

It takes about one year of ordinary farm work to train a pair of steers in all the different branches, at least that time, so that you can say they are properly broken.

Management of Dairy Cows.

WILLIAM H. WHITE, SOUTH WINDSOR.

The cow is one of the most useful and economical animals kept on the farm. Whilst extolling her merits I would detract from none, yet claim all her due. Without her we should be destitute of many of the comforts and luxuries of life supplied to our tables, besides the other inconveniencies arising from the destitution of cattle. The main object, then, in keeping the cow, when reduced to its lowest sense, is the profit she will bring us in her young, milk, and other products. The great question then to solve is, how best to attain this object? In solving this question, there are many preliminaries to be considered; such as the capacity of the farm occupied, amount of care that can be bestowed upon the cows; capacity of the cows for, with the least loss of time from not giving milk; kind of food that can be provided best adapted to keep up the quantity as well as quality of milk; means of perpetuating the best milkers, as well as improving thereon.

With regard to the first preliminary, farmers are too anxious to stock their farms with a too numerous herd; consequently overstock, so that instead of obtaining the best results, a much less proportional if not gross profit is derived; this is a great failing, and should be avoided. Look through the dairying sections of our country, as well as among farmers generally, and you will find that more stock is kept than is *well cared for;* and where any is allowed to suffer, too frequently it is the poor cow. Perhaps the fore part of the season will furnish an abundant pasture, with rich, clean grass; but July and August's hot sun and September's drouth dry it up, and water often fails, so that during the latter and succeeding month it is with the greatest difficulty that the cow can get enough to sustain life, saying nothing about converting a portion of it into the much prized lacteal fluid. All her time is consumed in picking or gnawing the short, dry, crisp, if not dead herbage, and in rambling in search of the best; no time is had for ruminating, so essential to the secretion of milk; the consequence is the cow fails in the quantity as well as quality of milk she gives, if she does not dry up altogether, to the no small wonder of her owner. It should be kept in mind that the cow requires a certain amount of food to sustain the system in health; this is first furnished from the great laboratory that converts the food into that form from which the life-sustaining as well as milk-forming secretions are elaborated—the stomach. If the formative principle be deficient, or only sufficient to sustain life, it is self-evident that milk cannot be secreted; as well think the good housewife could make a loaf of bread, destitute of the necessary appliances for making it. If the cow is well supplied with good, succulent, rich food, she is furnished with the means of producing milk, the same as the housekeeper is in making bread, when well supplied with the necessary ingredients. No food is superior to good, fresh, sweet, clean grass, in enabling cows to secrete milk, when to be had in abundance; the cow then fills herself quickly without a large range; she then lies down in the shade, if one is available, or is furnished, and quietly ruminates, thus preparing her food to perform its functions, for be it remembered, the food is swallowed with little or no mastication, and passes into the outer stomach, to be raised when the rumen is filled, and chewed in the form of the cud; quietness is essential to rumination and secretion; without this, little secretion can go on. When good grass cannot be furnished, or it begins to fail from drouth or fall frosts, resort should be had to other sources, or feeding. For this purpose crops of corn, rye, oats, clover, roots, etc., should be grown to be fed green as occasion requires. By providing a substitute of this kind, for grass, we are enabled to keep up the flow of milk to a much greater extent than otherwise. As soon as the grass begins to grow short, throw out a small feed of this succulent food, thus provided. A small patch will go far towards lengthening out the pasture, and if more is grown than is needed for green fodder, it will make excellent winter food by being properly cured and stored. The winter feeding and care of dairy cows is altogether too extensive a subject to be here treated in detail, and I pass it, remarking that cows should have good clean stables, be well bedded, secure from fresh drafts of air, stable well ventilated, fed with rich, succulent food in variety, and have the best of regular care.

It is a difficult matter to determine the number of acres required to keep one or any number of cows, as our soils vary so much in capacity, and they are so unequally developed, but in some places where the soil's capacity is strongly developed, one acre will keep a cow the year round; it is, however, by great thoroughness of culture, and care of the stock. As cow's milk consists of a certain per cent. of phosphates, and these being derived from the soil and are carried away, it is necessary to replace them by applications of bones or other manures containing phosphates, to the soil, or the time will come, after being cow pastured for a length of time, the pastures will fail of giving the best results. Having stated on how small a quantity of land a sufficiency may be produced to keep one cow a year, I leave it for the reader to judge how many acres he can afford to give to each of his herd of cows.

With regard to the capacity of the cows holding out their milk, I take exceptions to the common practice of a large class of farmers of letting a cow go dry three to five months in the year, thus neutralizing the profits of the milk season. I freely admit that there is a great difference in cows in this respect; but I hold that the very poorest, as well as those not so poor, may be greatly improved in this respect by careful milking and feeding. The manner in which a cow is milked often makes a large difference in relation to their drying off, for if not gently, quickly and thoroughly milked, she will refuse, often, to give down her milk; and a small quantity left in the udder has a tendency of so affecting the cow that after a while it dries her off entirely; and as the quantity decreases, stripping becomes more irksome, and the labor is less faithfully done; and as the milk decreases the feed is diminished in quality if not in quantity, which has a still greater tendency to diminish the flow, whereas if instead of negligence, better attention is given to the milking, mode of feeding, and care generally, the cow would continue to give milk longer and longer each year, till she reached her maximum time. A good cow should be milked till within three to five weeks of calving; and judiciously kept will pay her keeping, with a surplus, from the time she goes into winter quarters. Cows properly treated will not go dry longer than the above time, and during this interval they should be very carefully attended to, for whether lean or fat, they should be in a thriving condition when the calf is dropped. Often for want of this care, cows are nearly or quite useless for many weeks, even with good care out of season.

A heifer with her first calf, if milked to within a few weeks of calving, and properly kept and cared for, will, without difficulty, retain the flow in after seasons; but where a different course has been pursued it is not such an easy matter. In breaking a heifer into milking, a great deal of abuse may be avoided by spending a few minutes each day for some time before calving, in handling and rubbing her gently with the hand, as nearly all over as convenient. If the calf is to be raised it is better to let it lie the first twenty-four or forty-eight hours with the mother, and then tie it up out of sight of each other, and teach it to drink. If the heifer has been neglected before calving, and is wild, tole or coax her into a strong pen or stable; never attempt to drive her until all other means have been exhausted. After she is in the pen, move about her gently, and handle the calf; and by coaxing and gentleness it will not, probably, be long before she can be handled, and you have gained the victory, the greatest of which will be over a violent temper. Cows thus treated when first broken are worth very much more than those where harshness is used, as is too frequently the case. You ask why? Because, evidently, they are anxious to be milked, and often seem to contend for preference, by approaching or looking wistfully at the milker, as he enters the yard or stable with the milk pail; as a natural consequence such cows never refuse to give down their milk, nor kick, or start away from the milker, unless for some unnatural cause. If a man has such a cow to sell, and can make the purchaser believe the truth of his statements, he has little difficulty in obtaining a ready sale, even at a high price. There is an art in milking cows that is only learned by practice, and not from any written statement or directions. A few things should ever be observed in milking, and one very important one is, that no talking or noise should be going on in the yard or stable during milking, for as a general thing cows will not give as much milk as when the milking is quietly and quickly done.

As auxiliaries to good liberal feeding of hay, corn fodder, grain and roots, pure water, salt, shelter, and comfortable stables, as well as daily carding are necessary. When all these and other requisites are complied with, and cows receive liberal keep when dry as well as when in milk, they will be made to pay a better profit than under ordinary treatment and care. The choosing a *good* cow is always attended with more or less risk, but when a good one is once obtained, make her one of the fixtures, and breed from her to supply a sufficient dairy stock, remembering that the sire exerts a powerful influence on his progeny. He then should be from parents of good milk producing qualities.

Spaying Cows.—By the Secretary.

My attention has been called to this subject by Mr. Albert Moore, of Salisbury, who refers to an article proposing a substitute in the Genesee Farmer for 1838, Vol. 3, page 106. He says also, " that this has been tried on two cows in this town and is a success, and ought to be further experimented on, and the results made known. More butter and cheese can be made from the milk of a spayed cow than an unspayed one, and the milk of the former sells higher in the cities. It is of immense consequence to those who send the milk to market, as the supply can be maintained the year round.

Immediately after a cow is with calf, her milk gradually becomes more and more watery and less in quantity up to the time of calving, and some are milked almost to that time, although the milk becomes a weak, unhealthy fluid, unfit for any human stomach. Most farmers when they begin to fatten a cow or heifer first give access to the bull, and many are not slaughtered till within a month or two of the time of calving. A butcher has told me, and I have seen it myself, that when he slits the knife along on the belly a watery substance oozes out, if the animal is with calf, but it is not so with male animals or with heifers not with calf. Nearly half of the beef consumed in the country is of this sickening, dropsical character, which can be prevented by spaying or this substitute. I think it worthy the attention of all farmers, and even of those keeping but one cow, as it is so easily done, and with perfect safety, and the obstruction can be easily removed when desired, which is impossible when the old method is adopted."

The operation to which Mr. Moore refers, consists, as described in the Farmer, in introducing a rifle bullet a few inches into the *vagina* of the cow. This becomes imbedded in the parts, and the animal does not come in heat. The bullet is introduced by the aid of a rod or hollow tube. Mr. Moore advises, as has been successfully done with cows, to use a bullet with a larger ball of rubber to keep it in place for a time, and to use a tube and rod in putting them in place.

The spaying of cows has been successfully practiced according to the French method, by Dr. Riggs, of Hartford, as described in the Homestead, Vol. IV, pages 620 and 748. By a happy invention of Dr. Riggs, there described, of a steel thumb nail, the process is rendered much safer, and it is more easily performed.

The process consists in removing the ovaries, according to the directions given by Morin, using the steel thumb nail instead of the one provided by nature. It should be done within thirty or forty days after calving, when the cow is giving the highest flow of milk.

Several cases are reported in the Homestead, which were highly successful not only in increasing the flow of milk, but also the quality.

Training of Steers.

Ralph W. Robinson, Hampton.

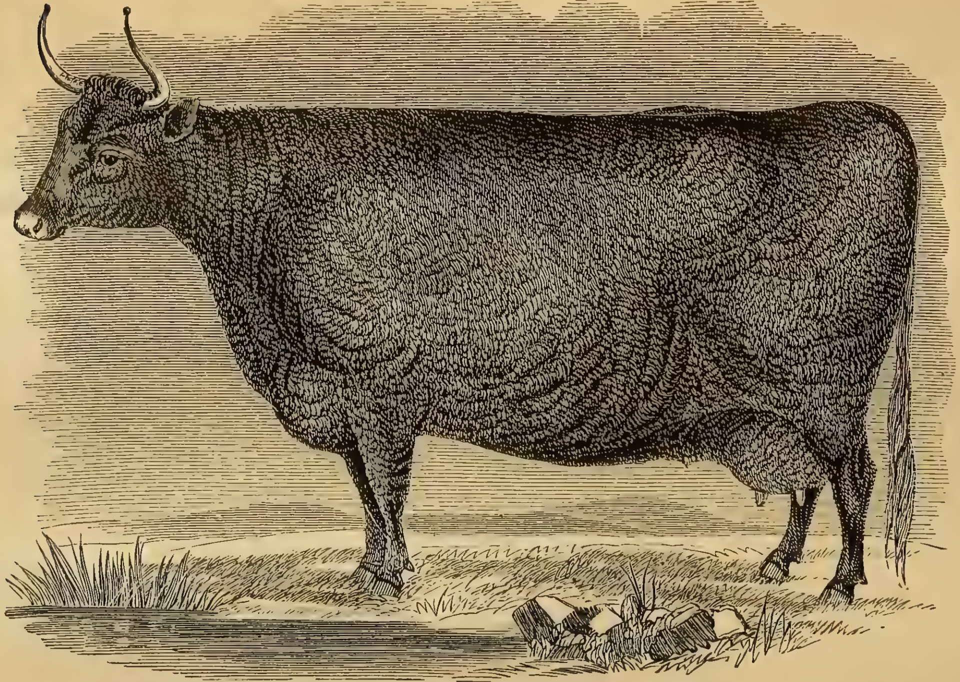
Many people at the present day follow the barbarous practice of their fathers in breaking steers, which was by physical force, in the following manner, viz: Two or three men would catch and hold them till they could roughly and rudely get a yoke upon their necks, then their tails were tied together to keep them from turning the yoke. This done, they were placed between two yoke of oxen of sufficient strength, the forward ones to draw them in case of hanging back, while those behind would hold them if they showed any disposition to run. In this manner they were driven, perhaps in the highway, or in the field to plow; sometimes they would become weary and spirit-broken, would lie down and show no disposition to get up. Cruel practices were then performed upon them, to get them upon their feet again. Sometimes they were dragged upon the ground by the forward cattle, until the skin was torn from their legs in many places; sometimes they would be beaten unmercifully with whip or cudgel till the blood flowed freely. If this did not answer the purpose, other wicked and cruel performances were practiced, such as sticking a sharp-pointed knife into their flesh suddenly, pinching their tails with a pair of nippers, or burying their noses in the ground to stop their breathing. If, after practicing some or all of these cruelties upon them, they succeeded in raising them to their feet, they would exclaim with an air of pride and satisfaction, "There, your turbulent disposition is subdued, we shall have no more trouble with you." I have many times assisted in breaking steers according to the above fashion, in the days of my boyhood, really and honestly supposing at that time that these cruelties were necessary to subdue their ugly, turbulent dispositions. Yet a something within me always seemed to say, "Why not treat them kindly?" As I grew to manhood, and became myself the owner of cattle, I soon learned that animals, (like men,) were capable of appreciating kind treatment. I therefore pursued a very different course with regard to breaking, or rather training steers. I will now give you my plan, which suits *me* as well as any I have ever seen, although others may have what seems to them a better one.

I commence with them between the age of three months and three years, as best suits my convenience. I take one at a time in a small yard, with whip in my hand, (not to be used, however, as formerly,) and follow him round the yard. When he comes to the corner, where he must turn, I swing my whip to him and say "Haw," and continue this operation at each successive corner. After following him round in this manner an hour or so, (longer or shorter, as the case may be,) he begins to grow leg-weary. I can then get pretty near him, so as to lay my hand or the lash upon him. I also give him occasionally a slice of carrot or turnip, or an ear of soft corn, which I previously put in my pocket for the purpose, and he will very soon apparently realize that although imprisoned in a small yard, he is receiving *gentle*, *kind* and *humane* treatment from him who is to appreciate his valuable services in after life.

I talk to him kindly, handle him, pat him, scratch him gently, and when he becomes sufficiently docile I put a rope around his horns and commence breaking him. With the same kind treatment, and a small share of physical force applied to the rope, he can soon be learned to haw and gee in the middle as well as at the corners of the yard, and will soon learn the motion of the whip also. I drive him straight through the middle of the yard, and also learn him to back. When I can haw and gee him around without much force upon the rope, I take it off, and drive him without. Finding him now in a mood to be handled at pleasure, I put the bow upon his neck and take it off again several times. He sees by this time that he is not hurt by the whip or the bow, has received nothing from my hands but kind treatment and occasionally a bite of such eatables as he is extravagantly fond of, and makes up his mind to do almost anything I ask him. I perform this operation with both steers as many times as I think necessary, which must always be left to the judgment of him who trains them.

After a while I take them both into the yard and drive them together, first one on the near side and then the other. This habituates them to travel side by side both ways, which I consider a very important matter, in case they should at some future time contract such habits as we frequently see in working cattle. Yoking and changing them to the other side is the best remedy I know of for crowding or hauling.

When of sufficient strength to handle the cart, I put them on to it, and learn them to back, commencing where the ground descends a little, so that the cart will almost back itself. After training them here awhile, I take them where the ground is level, and then where it ascends. If they throw themselves out from the tongue, as steers are apt to do, I put a rope or small chain around them both, which will soon break them of that habit. When they can back an empty cart pretty well, then try them on a very small load, and so increase it by degrees. It is of the utmost importance that steers should never be required to back a load until they have *learned to back well.*



Devon Cow "BEAUTY," 25 A. D. H. Calved March 2d, 1853. Bred by E. H. Hyde, Stafford, Conn.

Sire, Albert (2,) imported. Dam, Lady Jane. Winner of the following prizes:—1st, as a Calf, at the Conn. State Agricultural Society; 1st prize at Tolland County Society, as a Heifer; 1st prize as a Cow at the Worcester Co. Agricultural Soc. at Worcester, Mass.

It is is also important in working them that their work should be adapted to their capacities. Steers are like boys, capable of performing much work, provided the work is light and done in such a manner that they are not disgusted with it, or discouraged.

In closing this essay, I wish to impress upon the minds of those who may have the training of steers, that kind and gentle treatment, with proper skill, will accomplish the thing desired, and that those supposed ugly dispositions, which we so often see in cattle, are the effect, ninety-nine times in a hundred, of *harsh*, *cruel* treatment received at the hands of those who have had the care of them.

Devons.

J. N. BLAKESLEE, WATERTOWN.

The first Devons in this country of which I have any knowledge, were imported by Winthrop & Davenport, and landed at Plymouth, Mass., about the year 1790. Some of these found their way into Durham, thence to Farmington and thence to Plymouth.

There was another importation soon after into Otsego County, N. Y. Some of these were brought to Watertown by Mr. John Buckingham. Whether any of these importations were in their purity when brought into the state is more than I know.

The next Devons were bought by Mr. Hurlburt, from George K. Patterson, of Maryland. The Patterson stock is the only stock we can depend upon for purity of blood in the Devon breed of cattle.

When the Patterson stock was first introduced they were short milkers and not the best for the slaughter, but by the arts of breeding we have bred in the milking qualities so that they are equal to any other breed. For work they are the very best. We have had a market at the south till within a few years. Now they are raised for the dairy and slaughter. The last pair of oxen I sold did all my work on the farm, were worked on Friday and went to the slaughter on next Monday. I have now three pair of younger oxen for sale and they are just as fit for the slaughter as for work. They were pastured in a field with a flock of sheep most of the season.

I keep my young stock short and let them grow in a state of nature. I feed nothing but hay and grass. If they have a full supply they will get fat.

We find a market at home and in Waterbury. My two year old heifers averaged for slaughtering from sixty to seventy dollars. The expense of raising I cannot tell, for what they eat grows out of the earth, hay and grass.

I am determined to keep the Patterson stock pure, believing that they possess all the valuable qualities necessary for the use of man.

Devons.

B. H. Andrews, Waterbury.

The breeds most common in this section are what we denominate the native or common cattle crossed with various grades of Devon blood—and they are esteemed for working oxen, butter cows and superior quality of beef, attaining to four thousand pounds (4,000 lbs.) live weight the pair. The beef when fully ripe being better marbled, with less offal than the beef of any other cattle. There are but few breeders of pure Devons; or in fact of any cattle. The dairy men slaughtering their calves and the beef men preferring to purchase their cattle part grown than to submit to growing their own stock for beef. This being a fast age they turn their money quicker. The consequence is we are less able to supply the Westchester county market with fine workers than formerly—but when peculiarly *fine* cattle are wanted they come to us still. And even further off, as I have recently furnished several pair to go to Philadelphia, Pa., and Trenton, New Jersey.

You ask some historical facts respecting the introduction of Devons into this state, and the characteristics of the different importations? It is the generally received opinion that

Messrs. S. & L. Hurlbut, of Winchester Center, were the first to introduce the North Devons into Connecticut. That theirs was the first successful and permanent introduction, is certain. But there was a pair of Devons introduced into the town of Watertown, by Capt. John Buckingham as early as the year 1815. The bull was used to the common cows till the fall of 1816, (that forever memorable cold summer) when owing to scarcity of forage, (not fully understanding his value) he butchered him leaving nothing but grades with which to propagate his kind.

The father of Capt. Buckingham on showing me a team of steers of his get, remarked "he had better thrown $200 into the fire." Thus they degenerated and became extinct.

The question arises—where did Capt. Buckingham obtain those Devons. All the information that I can give is what I received from him. Travelling some time previous in company with his father in what was then considered the "far west," he discovered them in the herd of one "Judge Kelley" of "Cherry Valley." When he commenced farming for himself he procured the pair referred to above. When or by whom imported I have been unable to learn. But to this source it is believed that Watertown owes the commencement of its far spread reputation for breeding fine oxen. The spirited enterprise of James Bishop, a popular hotel keeper, also had its effect. He went out and bought up the scrub bulls of the town and procured a fine red bull and persuaded the farmers to bring their cows to his bull. The enterprising farmers were not slow to discover the advantage of such a course and the Hurlbut Devons following in quick succession were somewhat extensively introduced into their herds. Among the most popular Devon bulls introduced into that town, for his get of fine oxen and extra milch cows, was the bull "Matchless" purchased of me by Jacob N. Blakeslee. He was not duly appreciated until his stock became somewhat matured and Mr. Blakeslee having used him as long as he thought prudent, without too close inbreeding, sold him into Bristol, from there he went to Hartford and thence into the hands of Seth Tillotson, of Farmington. At this time a company was formed at Walpole, N. H., who sent out agents to come and purchase the best Devon stock bull in Connecticut. Coming into Watertown, passing among the Devon herds, pointing out such animals as pleased them, they inquired "what bull sired that ox, steer, cow or heifer?" The uniform reply was, "Matchless." F. A. Wise, of Walpole, was one of this committee. He told that on his inquiring where "Matchless" was, the reply was "he is an old, worn out bull," and he was urged to purchase one of his get. He refused and told his associate that "he would have Matchless if he cost $500.00. He cared not for his age or how he looked." On Saturday they received a hint that the people of Woodbury where he was kept when I owned him, were about forming a company to get him back to that town. So excited were they by the information that they hired a man to secretly convey them to Farmington on Sunday. Calling early Monday morning on Mr. Tillotson, to purchase cattle, saying among other things "they wanted a bull that would bring their cows to milk," he showed them a young bull, but said nothing of Matchless. When about to leave the yard they ran foul of Matchless, the first apparent notice they had taken of him. "Why, here is another bull, what do you ask for him?" "Don't want to sell him." "But what will you take for him?" Again the same reply. This being continued till Mr. Tillotson's son, to silence them, says, "we will take $100.00." The money was immediately produced and the bull taken to New Hampshire, where I was informed by one of the company he was still kept at the age of fourteen years.

I have been thus minute in the history of the bull Matchless, as the history of any superior breeding animal is always interesting to breeders. The history of a cow of his get while owned by myself is not a little interesting. Her dam was of the class know as the "Eaton" breed, a breed of cattle possessing strong characteristic qualities of the Hereford race except the white or mottled face; they being of dark chocolate color without any white; short milkers but possessing good beefing qualities, showing the importance of the bull being of good milking blood in producing good dairy stock.

This cow was noted as a milker. She was purchased of her breeder by Elias B. Bishop, of New Haven. He sold her to Wm. L. Cowles, of Farmington, who exhibited her at the American Institute, N. Y., where she was purchased by Sam'l A. Smith, of Smithtown, L. I. Of him she was purchased by Noel J. Becar, N. Y., (the gentleman who was interested with Col. Lewis G. Morris in the importation of Short-horns and South Down sheep) and by him shipped to Liverpool, Eng. The only Devon cow to my knowledge exported to Europe.

The Devons introduced into Connecticut by S. & L. Hurlburt, Winchester, in 1817 were from the first product of the importation of Robert Patterson, Baltimore, Maryland, sired by "Anchises." Since then George Patterson has imported several bulls with one or two heifers. The best stock bull he ever imported it is believed was "Eclipse." Messrs. Hurlburt's first bull was Holkham, stock fine, small, and short milkers. In 1835 they procured "Exchange" of Mr. Patterson. He improved the size, and the quantity of milk—but the bulls of his get were vicious and dangerous to handle; one of them belonging to Lauren Thrall, of Torrington, killing an Irishman, his tender. The next bull was "Baltimore" in 1840; Mr. Hurlbut not liking him kept him but two years and saved but few animals of his get in his herd. Next was Bloomfield in 1843. He was a bull of good substance, of very nice finish, sired by imported Eclipse. His stock was of mild, quiet disposition, good size and good milkers. His stock was disseminated more widely probably than any other bull. He was purchased at an advanced age and taken to Walpole, N. H., to supply the place of Matchless.

Next in 1850, Messrs. Hurlbut imported "Albert" from the herd of Richard Merson, of Brinsworthy, North Molton, Devon. He was of large size and good finish and the first cross on the Bloomfield stock produced some very superior animals; but it is believed that the subsequent crosses of the stock did not fully meet the expectations of breeders.

Messrs. Catlin & Case, of Harwinton, imported the bull "Rubens" and heifer "Redley" and another (which failed to breed) in 1851 from the herd of George Turner. The bull was a superior animal, but died young from over kindness. From his get were some superior dairy cows. John Allen, of Saybrook, imported a pair from the herd of Geo. Turner. From this stock I have bred some good milkers of beautiful finish crossed by the stock of Albert. Randolph Linsley, of Meriden imported some very costly animals from different herds in England, but sold out his whole herd to Hon. E. H. Hyde, of Stafford.

There are no thorough-bred Short-horns in this vicinity. A few Alderneys are getting in here. Charles Benedict has just commenced a herd of pure blood in Waterbury.

Some sixty years ago, Capt. Vose, of Derby, imported some "long horned Durhams." These were bred by Luman Stone, but as the oxen were breachy, the cows cross and kicking, and showed vicious propensities, they soon became extinct.

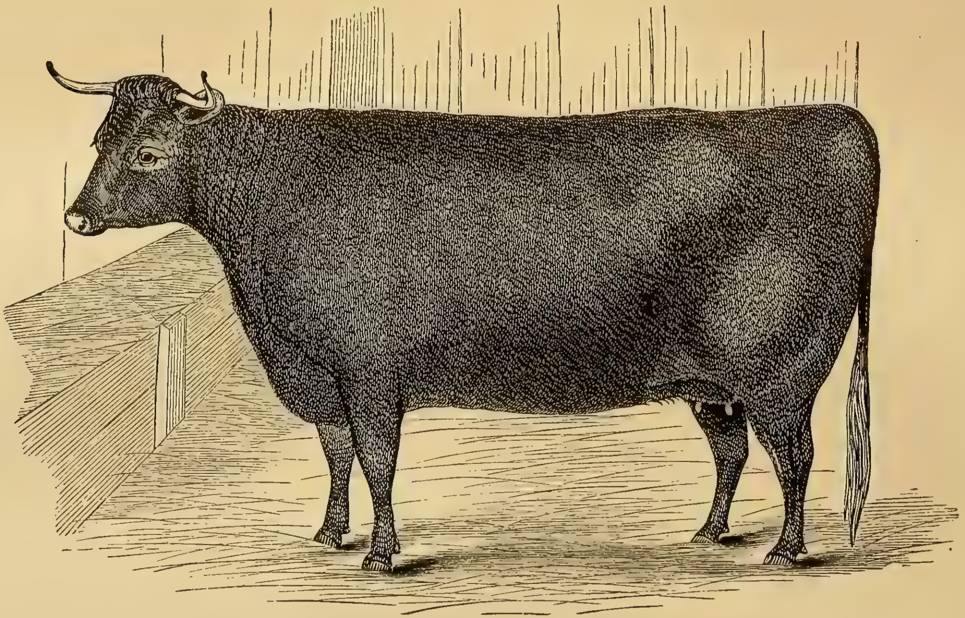
Devons.

P. M. AUGUR, MIDDLEFIELD.

The State of Connecticut embraces an area of 4674 square miles; its surface as a whole is decidedly hilly, and except the alluvial valleys of the larger rivers has a comparatively thin soil which must be constantly kept up by fertilizers. To supply the desired manures, farm stock must be kept and it is a question of great importance to determine what stock is best adapted to the soil and to the special wants of the farmer.

Of all the races of cattle known among us, probably none has been more favorably known than the Devon, which is conceded to be the oldest and purest of the English breeds of cattle.

Fifty years before the Christian era, when Julius Cæsar invaded and conquered England, the Native Britons owned large numbers of cattle upon whose flesh and milk they chiefly subsisted. As the Reindeer forms the wealth of the Laplander so among them, cattle formed the chief part of their possessions.



Devon Cow "FAIRY," 9th, 101 A. D. H., as a 2 years old. Sire, Comet, A. D. H. 22 (E, 162). Dam, Fairy 4th, 99.

Winner of the following prizes:—1st prize as a yearling at Tolland Co. Fair; 2d prize as a 2 years old at Tolland Co. Fair; 1st prize as a 3 yrs. old at Tolland Co. Fair; 1st prize as a 4 years old at Tolland Co. Fair; 2d prize as a two years old at the New England Fair at Springfield, Mass., also at Providence, R. I., in 1867; also the sweepstakes Medal at the New England Fair at Providence, R. I., Sept., 1867, competition open to U. S. and Canada; also winner of the first prize as the best Devon Cow, at Hartford Co. Fair, Oct., 1867, competition open to the State.

As has been truly said "in the unsettled state of society in early times, with constant danger from outside enemies, that property was only valuable which could be hurried away at the invaders' approach. The country for centuries was frequently overrun by hostile armies, before which the population of the western district retired taking with them to the mountain fastnesses of North Devon, Cornwall and Wales, many of their cattle."

"Thence, it is said, it resulted that the cattle, of Devon, Sussex, Wales and Scotland had remained much the same from time immemorial."

The peculiarly hardy race of North Devon cattle, with their fixed characteristics and long perpetuated qualities coming as they do from a hilly country like our own, seem especially adapted for the State of Connecticut.

The special good qualities of the Devons as enumerated in the Encyclopedia Brittanica, are their symmetry, uniformity, having a large blood circulation, being active, and better workers than other breeds, of having the property of feeding at an early age, and producing fine grained beef of superior quality, and herds of Devon cows in Devonshire are also stated in the above work as making an average yield of 1 lb. of butter per day during the butter season.

R. L. Allen in his work on domestic animals, says the milk of the Devon is invariably rich and when appropriately bred, none surpass them for the quality of butter and cheese they yield.

Mr. Bloomfield, manager of the herd of the Earl of Leicester, from a herd of 20 Devon cows made an average yield of 200 lbs. of butter per year, or at the rate of 4 lbs. per week for the entire year. He also offered to milk 40 pure Devons of his herd against an equal number of any breed from any one herd in England, without finding a competitor.

Mr. Youatt quotes from a correspondent who kept Devon cows, the statement that 10 of them averaged in summer 60 lbs. of butter per week.

Mr. Coleman in his European Agriculture says: "the most productive cow in butter I have found was a North

Devon, which for several weeks in succession, without extra feed, produced twenty-one lbs. of butter per week. The character of the owner places the fact beyond a doubt."

So with cows owned in our state at the present time, the actual produce as to both quantity and quality of butter places them in the very front rank as to excellence.

One fallacy is obvious to the reflective mind, viz: that impressions are often strongest which are merely superficial. To illustrate, a buyer once at one purchase bought a Devon and a Short-horn cow. The Short-horn was famed as a milker, the Devon was pronounced ordinary; the milk of both had been put in common with a herd of cows. The buyer experimented and found the Devon to yield 1 lb. of butter from 7⅛ qts of milk while the Short-horn required 12 qts. to produce 1 lb.; both were good cows but the Devon yielded in that case some 15 per cent. more butter on a given amount of feed than the Short-horn. Now which for a New England farm would in reality be the best stock where butter is a prime object, and not *mere quantity* of milk? My personal experience in the matter is that in butter-making with ordinary feed and treatment, after having tried Short-horns, Alderneys, and Devons, I give the Devons the preference. The yield of milk though falling below the Short-horn in quantity, surpasses it in quality, and while it comes a little below the Alderney in quality, it exceeds it in quantity and the Devons will sustain themselves on hilly pasture far better than either.

But the rare excellence of the Devons is in their surpassing beauty and value as working oxen.

The fame of the Connecticut working cattle is owing in no small degree to this element. This was well illustrated in the several Agricultural Fairs held in our state the past year; in almost every instance where trains of working oxen were seen, three-fourths to seven-eighths showed a preponderance of Devon blood, and this was especially true among prize cattle, and when put to the test of severe draught they showed agility and strength equal to any reasonable emergency.

Instances are frequent where a Devon bull of good blood in a village, in five years time, has added thousands of dollars to the value of the working cattle in such a neighborhood. The effect of the sire is so strong that even calves from white cows often match in nicely with those of grade Devons and all pass as fine Devon grade. To secure such results in a high degree, pure bred bulls only should be used, as the Devon characteristics in such are hereditary and transmissible, while in grades there is much uncertainty and a decided liability to cry back toward the mongrel side. The first cross from a pure breed is usually good, but in proportion as you go beyond that point is the liability to deteriorate.

The question of size is often made a point of discussion concerning Devons. We concede that the Devons are not the largest breed of cattle. But they are fine in muscle and bone, have a strong digestive system, and under good treatment show as good results as any breed among us; the question is not how without regard to expense can the largest animal be produced, but on a certain amount of food how can flesh be produced to the best profits?

As a single example of thrifty Devon steers which have been noticed, was a pair of yearlings (16 months old) exhibited at the New England Fair at Providence, from New London, Conn. These steers were sired by Manhattan, the Brattleboro Sweepstakes Bull, and weighed at Providence some 1780 lbs., were well broke to lead, and were valued at $250. These were simply kept in a healthy growing condition. They were winners of the 1st prize in their class.

At the New England Fair at Concord, N. H., I was much interested in the comparison of different breeds of working oxen. One pair especially attracted my attention from Upper Gilmanton, N. H., high grade Devons, 4 years old, beautifully matched, universally admired but not large boned cattle. The working cattle were tested by drawing 6000 lbs. of pig-iron on a stone drag. Large oxen were hitched on, and unhitched again to the chagrin of their owners, but these Devons were brought in their turn and with one even united effort accomplished all that was required amid the huzzas of an admiring crowd. At the several town and county fairs in our state the past fall, similar tests of strength were made, showing the Devons in proportion to weight unrivaled by cattle of any other breed.

These cattle are always saleable at very high prices; as a showy horse is always admired so are beautiful cattle, and the matter of beauty and symmetry is by no means to be underrated in a fine pair of working oxen, and when their period of usefulness is past, and fat and sleek they find their way to New York market, it is easy to find customers at the highest market prices.

In alluding to the matter of beef I would say that large bone implies also coarse grained beef. As the Dorking fowl surpasses the Shanghai, so we believe the Devon to surpass the large framed breeds, the beef being especially juicy and well marbled and dressing away less than most other breeds.

We freely admit that there is yet room to advance in the perfection and improvement of the Devons of America, and in no way can this be done more judiciously than by the use of only the very best male animals, and by observing the laws of nature in avoiding too close affinity. A breeding animal of near kin I believe should in no case be used when an animal equally desirable can be obtained elsewhere. In the judicious copulation of animals lies a great secret of success in improving our breeds of cattle.

The past history of Devons is full of encouragement for the future. History informs us that Devons were at an early period brought to Farmington, where they were highly esteemed, and famed as *Farmington Reds*. Gov. Leete also imported some fine Devons, greatly improving the farm stock on the sea-board, and stock is still found preserving the prominent traits of that old importation. The more recent effort made for the improvement and breeding of Devons was commenced in 1817 by Mr. Robert Patterson, Baltimore, Md., who received the bull Taurus and 6 heifers from the herd of the Earl of Leicester.

In 1819, S. & L. Hurlbut commenced the breeding of Devons, and in 1850 they imported Albert (2) whose progeny has received more prizes than any other recently imported. It is believed that full three-fourths of the recorded Devons in Connecticut trace back to either Albert or Taurus.

The heifers of Albert's progeny were good dairy cows, and the dam of Taurus in 1820 produced 13 lbs. of butter per week. A model dairy cow of my own herd is a descendant of Frank Quartly and Anchises and has produced while fed on hay and turnips only, at the rate of 11 lbs. of butter per week.

While with good feed and good care the Devons yield a satisfactory dairy produce, fatten easily and produce the best quality of beef, and make the finest, most beautiful and most serviceable workers, there is no reason for sparing any effort for their future higher development and perfection.

While the Alderneys in richness of milk alone considered are unsurpassed, yet they are too tender and frail for general farm stock.

While the Ayrshires produce a copious flow of milk for the milk vender, it is not specially adapted for producing the largest quantity or finest quality of butter, neither will the males compare as workers with the Devons.

And though the fame of the Short-horns be sounded loud and far, yet the realization of great results will be much oftener reached in the broad prairies of the west than on the hills of New England.

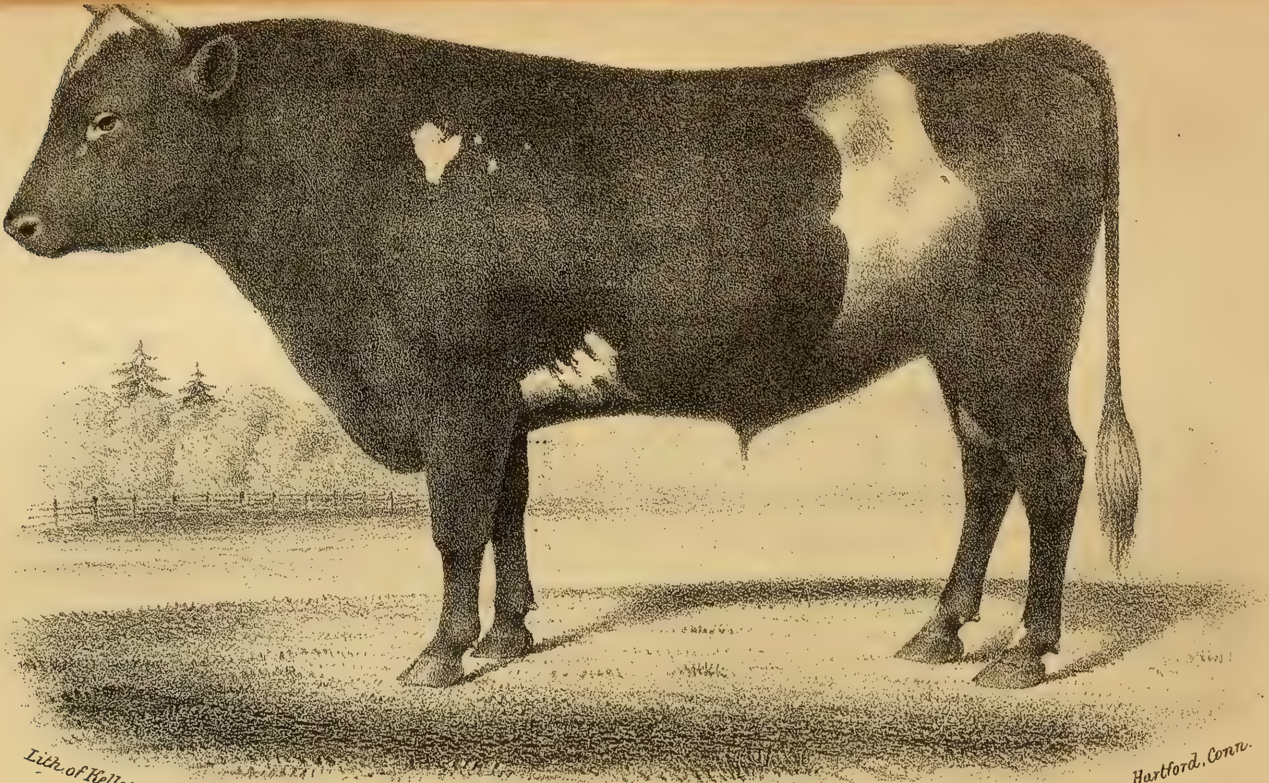
Having then in the Devon race of cattle so many desirable points, viz: beauty and symmetry in form and color, strong digestive organs, remarkable agility and docility, adapting them well for rough hill and somewhat scanty pastures, as also to be easily trained and handled. The cows giving a fair return of rich milk, making the best quality of butter; the oxen intelligent, active, with quick nerve and strong muscle, and as a breed making the finest quality of beef; with characteristics fitting them so admirably for the climate, soil and surface of New England, is it not wise for the Connecticut farmer to seek the advantages derived from a general crossing of this breed upon the native stock of our state, selecting bulls from good stock with good record and pedigree, carring any ideal of perfection constantly in mind and moving on to it step by step, until our stock shall be the pride of the state, and the source of unfailing profit to the thrifty farmer ?

Ayrshires.

H. S. Collins, Collinsville.

The origin of the Ayrshires, like that of all other breeds, is doubtful, but the causes which produced them and led to their peculiar perfection still exist. Let us consider these causes. The county of Ayr lies in the south-west of Scotland. It is hilly, its eastern and southern parts even mountainous, some peaks reaching a height of about 2,000 feet, and abounding in bleak, elevated moors and exposed hillsides. Its climate, though not subject to extreme cold, is moist, with disagreeable chilly winds from the Atlantic. The soil is often clayey and generally good, though much of it is unfit for tillage. The pasturage is excellent. It is essentially a dairy country, large portions being useless for any other purpose. The numerous manufactories in this and the adjacent counties furnish a ready market for dairy products. The land is divided among small tenants, a hardy, rugged race, who farm their own land, or rent small farms on long leases, and who do their own work.

For nearly a century it has been the constant endeavor of these farmers to raise such animals as would give the greatest return in milk, butter and cheese for the food consumed. Hardy and rugged they must be of necessity, easily kept, and able to withstand the severity of winter without extra care, and come out in the spring in condition to yield quick returns. Great care was used in the selection of cows for breeding. Such as gave the least milk, or of poor quality, were fattened or sold; calves were raised only from the best and richest milkers. Bulls were selected having the feminine characteristics desired in their offspring; with slender necks and fine heads, straight backs and full flanks, broad behind, with wide hips and short legs. For a long course of years this one object has been steadily pursued, beauty of form, fattening qualities, everything being secondary to this



Lith. of Kellogg & Bulkeley,

Hartford, Conn.

AYRSHIRE BULL "ALECK CHRISTIE"

3 YEARS OLD.

WON SWEEPSTAKES NEW ENGLAND FAIR 1867.

Bred. and owned by S. M. & D. Wells, Wethersfield, Conn.

specific purpose, and a breed has thus been formed capable of transmitting with certainty to their progeny their peculiar traits. Their form shows the dairy animal, the points being those universally recognized as belonging to great milkers. The light, small and clean head, the thin neck and flat fore-shoulder, the big barrel, with the posterior ribs springing well out, giving ample space for rumen and stomach, the wide pelvis, the width between the hind legs, the capacious udder, extending well forward, and hung high up, the prominent milk-veins, the gradually tapering, wedge-like form of body, with small bones and short legs, the belly and udder being the prominent objects. All these points show the milking animal, the "best machine for converting grass and fodder into milk, butter and cheese in the most economical way." This and this alone has the Ayrshire been bred for, and this she is. No other breed has been bred specifically to this end, is it then to be wondered at that the Ayrshires should be of unequaled excellence for dairy purposes, giving more milk, butter and cheese, in proportion to the size of the animal, and the food consumed than any other breed?

In color they are generally red, with white spots, the spots being clear and distinct, never gray or roan, nor with mingling colors. A few are all red, these generally of a yellowish or brownish shade, but the colors most desired are dark red, with not too much white.

In regard to the yield of milk and butter, the authorities agree closely. Charles L. Flint in his admirable work on "Dairy Farming," to which the writer is much indebted, says: "All dairy farmers who have any experience on the point, agree in stating that an Ayrshire cow generally gives a larger return of milk for the food consumed than a cow of any other breed, and *this is the point on which the question of profit depends.*" Youatt says: "The excellency of a dairy cow is estimated by the quantity and quality of her milk. The quantity yielded by the Ayrshire cow is, considering her size, very great. Five gallon's daily for two or three months after calving, may be considered as not more than an average quantity. Three gallons daily will be given for the next three months, and one gallon and a half during the succeeding four months. This would amount to more than 850 gallons, but allowing for some unproductive cows, the average per year may be considered 600 gallons."

Aiton gives 600 gallons per year as an average production, but says that thousands of the best Ayrshire cows, when in prime condition and well fed, give 1,000 gallons per annum. Milburn gives from 600 to 800 gallons as a fair average. A dairy of thirty or forty cows gave an average yield of 687 1-2 gallons. A cow owned by the Duke of Athol averaged over twelve quarts per day for a year. At a competition for a prize in 1861, six cows gave an average of fifty lbs. each during the trial, they being away from home, and of course not doing their best. A number of instances are noted of Ayrshires giving forty quarts per day.

In respect to the quality of the milk, the evidence seems equally conclusive. One writer says, "One dairy of thirty cows gave an average of 632 gallons per cow for the year, nine and a quarter quarts making a pound of butter." Youatt writes, "Three and one-half gallons of this milk will yield about one and a half lbs. of butter; an Ayrshire cow, therefore, may be reckoned to yield 257 lbs. of butter per annum." Milburn gives 260 lbs. of butter per year, (which is five lbs. per week the year through,) as an average production." Aiton says, "Twenty-seven and one-half gallons of milk will make twenty-one lbs. of full milk cheese. All authorities agree that in the production of cheese the Ayrshires are unequaled.

B. J. Stone, of Sturbridge, Mass., who has bred Ayrshires specially for butter-making, finds them to excel in this particular. He says: "Many of my cows will give 40 to 45 lbs. of milk per day on pasture, and make one and a half to two lbs. of butter. One cow made eight lbs. of butter in three days, on grass only. In a trial of cream churned in public in June, 1865, my cream yielded at four different trials, eight lbs. of butter from six quarts of cream, while out of four dairies of other breeds the yield was only six lbs. of butter from the same amount of cream."

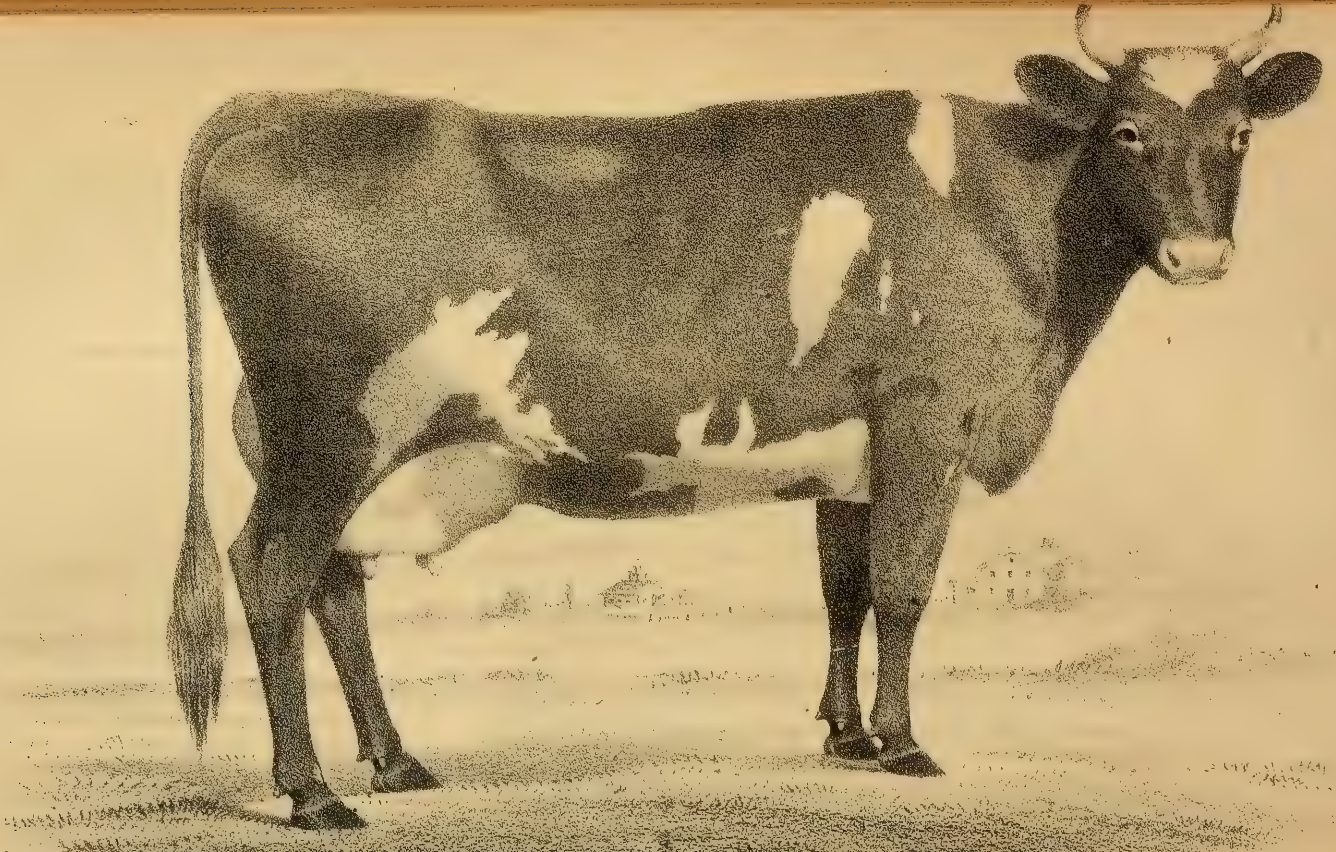
In speaking of their fattening qualities, Youatt says:—"They will fatten on farms and in districts where others could not, unless supported by artificial food. They unite perhaps in a greater degree than any other breed the supposed incompatible properties of yielding a great deal of milk and beef. On their natural food of poor quality they give milk abundantly and long, and often till within a few days of calving, but if moved to rich pastures they incline to beef. There is a lurking tendency to fatten about them which rich pastures always brings forth." Sanford Howard, a well-known authority, says of them: "Scotch farmers who have been in the practice of fattening stock of various kinds, assured me that Ayrshire steers of three to three and one-half years, fattened to as much profit as any, making the weight of 700 to 800 lbs. the four quarters. H. H. Peters fatted one of his cows in 1863, her dressed weight being over 1,060 lbs.,—beef 882 lbs., tallow 111 lbs., hide 70 lbs. The beef was of remarkably fine flavor, fine grained, and well marbled, the latter peculiarity being common to this breed."

In this country, and particularly in New England, the climate and the pasture are less favorable to the production of milk, and it would hardly be expected that Ayrshires should do as well here as at home. Yet their record is high. Flint says: "One of the four cows originally imported into this country by John P. Cushing, gave in one year 3864 quarts, beer measure, at ten lbs. to the gallon, being an average of over ten and a half beer quarts per day for the whole year." At our New England Agricultural Society's fair at Springfield, Mr. H. H. Peters exhibited four cows giving respectively thirty-nine and five-sixteenths, forty and five-sixteenths, thirty-eight, and thirty-four and one-sixteenth pounds. Nathan Foster, of Maine, one giving her own weight in seventeen days; in seven days giving two hundred ninety-six and one-quarter lbs., or forty-two lbs. five oz. per day. The cow Corslet exhibited by E. D. Pearce, averaged from May 2d to Sept. 1st, twenty-one and five-eighths quarts, weighing forty-six lbs., some days giving twenty-six quarts. Wm. Birnie brought two cows, Kitty 4th, and Daisy 5th, giving from

June 1st to Sept. 1st, 2,902 lbs., and 2,894 lbs., each giving over three times her live weight in the three months. Geo. B. Loring exhibited four animals which each gave fifteen quarts and over at two years of age, they being of small size.

In our own State we are in no way behind in Ayrshires, as the prizes taken at the last New England Fair at Providence, show. S. M. & D. Wells report cows giving as follows: "One calving in June, gave then twenty-four to twenty-six quarts per day, and in September eighteen quarts. Another, calving in July, gave eighteen to twenty quarts per day to September. Dolly, a small cow of 850 lbs., gave from April 1st to September 1st, 1867, 7,039 quarts of milk, (an average of about twenty-three quarts,) her greatest yield being fifty-five lbs. Another one, Flora, usually a winter cow, has given twenty-four quarts per day." Other breeders in the State, known to many as successful, can testify to the merits of this stock, but the writer has no precise data to give from them.

The writer can from his own experience corroborate the statements from various sources given above. Having made many careful experiments in feeding, milking, and butter-making, with Devons, Ayrshires, natives, and grades of all, as well as with grade Short-horns and Alderneys, he has found that on his soil and for his purpose the Ayrshires are decidedly the best. They are more hardy than the so-called natives, give more milk for the food consumed, and keep in better condition than others. His pastures being poor, and often drying up in the summer, he cannot show as large returns as some others, but two of his cows have given twenty-four quarts each per day, and the grand dam of one of them Jenny Lind, (not, however, in his possession,) has repeatedly given thirty quarts per day. Many of his cows have averaged *ten quarts* per day for *every day in the year*, including the time they were dry. In trials for butter, he has found the Ayrshires to vary, requiring from eight and three-quarters to ten quarts to make a pound of butter, but he never had one that gave poor milk. For milk, they are far more profitable than any others he has tried, holding out remarkably, and



Lith. of Kellogg & Bulkeley, Hartford, Conn.

AYRSHIRE COW FLORA 2ND

Nº 75. H. B.

Property of S. M. & D. Wells, Wethersfield, Conn.

often milking steadily up to time of calving, notwithstanding attempts to dry them up. One cow, calving Dec. 3d, held her first flush of milk through six months of winter without diminution, making a pound of butter from eight and three-quarters quarts of milk. Those calving in Autumn often go through winter with a loss of only three or four quarts from their first flush, in this respect far exceeding the natives. Being kept on his farm with grades and natives, fed and treated precisely alike, winter and summer, the Ayrshires have proved the most hardy, the best milkers, both in first yield and in holding out, have kept in the best condition on the same food, and have finally superseded the others by their own merits. The calves are remarkably hardy, and easy to raise, the writer having never lost one save by accident in calving, or by poison eaten in the field, while he has repeatedly lost Devons and Alderneys.

As working cattle, the Ayrshires are good, being docile and active. The bulls have always been worked on his farm, both single in a horse cart or on the plow in cultivating, and ahead of cattle, or yoked up together, and he believes that moderate work conduces to their welfare, and makes them get more hardy than if they stood in the barn as usual.

In conclusion, while allowing full credit to the excellencies of other breeds, the writer would from the experience he has gained, strongly recommend the Ayrshires to the farmers of Connecticut as being peculiarly adapted to their wants. They are no longer an experiment here, nor are they what may be called "fancy" stock, only suitable for persons of wealth, who can afford to lose money on them. They can be had at fair and moderate prices, are more hardy than any other breed we have, will keep in good condition and yield large returns when many others would fall away. In short, they are adapted to the *farmer's* use, and the often scanty pastures and rugged hill-sides of old Connecticut.

Remarks by the Secretary.

The early history of neat stock in the State is involved in great obscurity. During the Revolution, and for some time subsequent to it, few importations of stock were made, and it is comparatively within modern times that there has been an attempt at progress by introducing the improved breeds of England.

While the early introduction of particular animals has affected the cattle in different sections, yet what are known as "natives" have much the same qualities. The cattle from which New England natives have originated came from Great Britain, Denmark, and through New York, from Holland. A period of over two hundred years has served to mingle the blood thoroughly, the aim with most farmers in raising stock being to cross the breed.

Palfrey, in his history of New England, notices as follows the first introduction of cattle. He says: "Winslow, who had been absent eight months in England, and returned July, 1624, brought three heifers and a bull, the first beginning of any cattle of that kind in the land." A division of cattle took place three years after, in which some are spoken of as black, others black and white, and brindle, showing that there was no uniformity of color, giving any indication of their origin.

The Dutch at an early day brought cattle from Holland to New York. These cattle were more celebrated for the dairy than those of England, and their descendants to this day have maintained their reputation as great milkers.

As the demand for cattle was for a long time beyond the supply, everything was raised, and the hardships and scarcity endured by the early settlers were shared by their stock. Hence, little pains were taken for improvement, while exposure and hard fare naturally resulted in deterioration. Only here and there a farmer, seeing the difference in cattle, would seek to breed better animals, but such attempts had little persistency, and aiming at no fixed standard produced no permanent results.

In the meantime, with a more advanced system of husbandry, English farmers had improved their stock, developing in each breed their prominent characteristics. Thus we find the improved Short-horn, the Devon, and other breeds acquiring prominence. The great excellence thus developed led to the introduction of new stock into this country. Devons were brought into the State by several parties previous to those brought by Mr. Hurlburt in 1818, and although they left their marks on the stock of the State, as they were not bred in their purity they soon disappeared as distinct breeds. The Devons introduced and bred by Mr. Hurlburt have been so celebrated and have had so much influence on the stock of the State, that I present here the fullest information I can gather about them.

In reply to inquiries about Mr. Hurlburt's Devons, Mr. Stanley Griswold of Torringford, writes: "Mr. Hurlburt brought to Connecticut in the fall of 1818, a heifer called "Old Fancy," Davy's D. H. Book, (709,) sired by Taurus, (320,) dam one of the heifers presented Mr. Patterson by the Earl of Leicester in 1817.

Mr. Hurlburt bought of Mr. Patterson, at the same time with Fancy, a bull calf, which was lost from the boat on the passage to New York.

In the fall of 1819 he obtained "Holkham," Davy's D. H. Book, (215,) then a calf. Holkham, bred by Mr. Patterson, was sired by Taurus, (320,) dam a heifer presented Messrs. Patterson and Caton, of Maryland, by the Earl of Leicester. He afterwards bought of Mr. Patterson in 1834, "Exchange," D. H. B. (197,) also heifers at different times. From the same source, in 1842, he got the bull "Bloomfield," D. H. B. (143).

In 1850 he imported the bull "Albert." I think his Devons were all bred from Mr. Patterson's stock, except Albert, which he imported."

I copy from the transactions of the Connecticut State Agricultural Society for 1855, in a brief biographical sketch of Lemuel Hurlburt, a short notice of his breeding Devons, which agrees substantially with the account of Mr. Griswold:

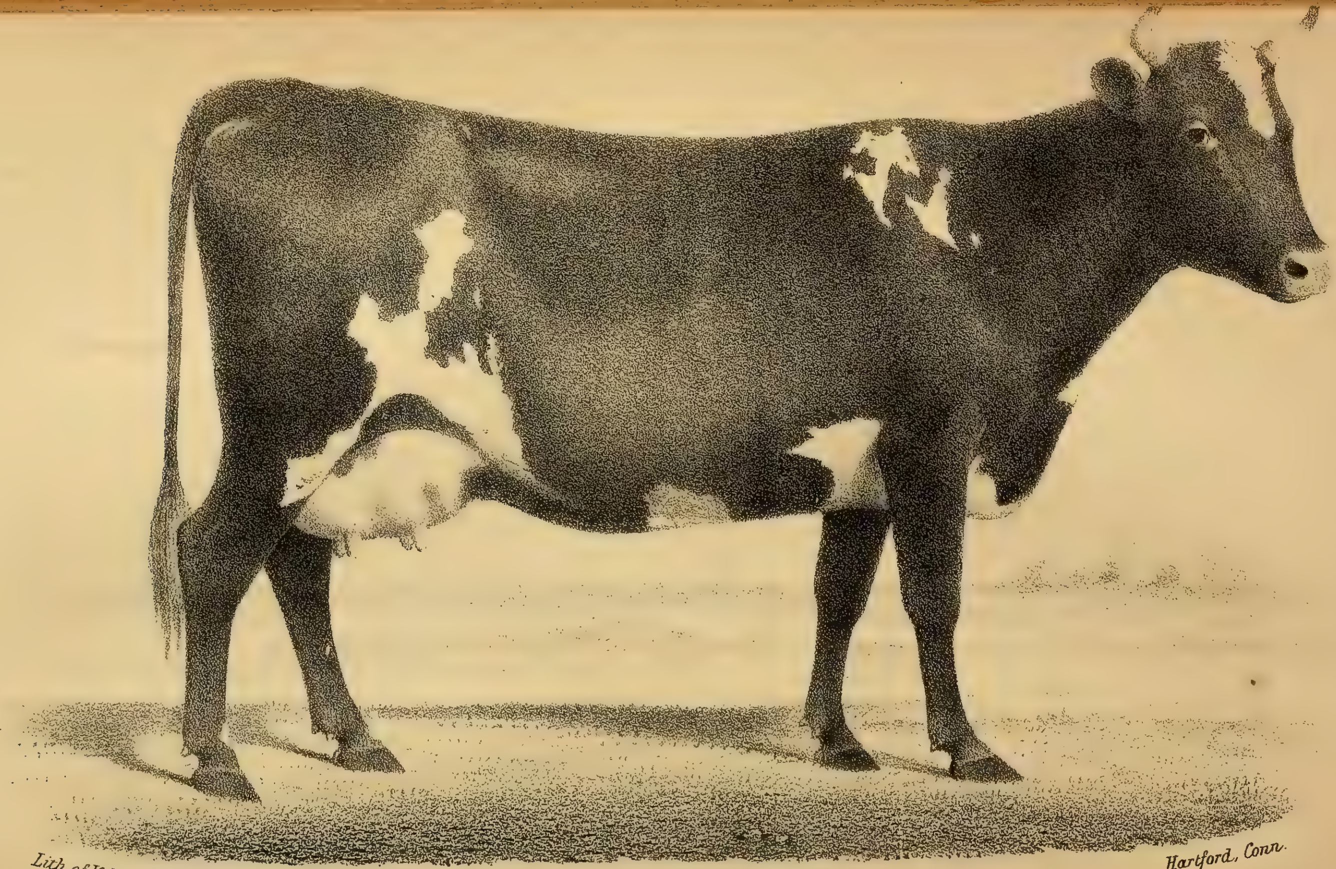
"In 1817, six beautiful North Devon heifers and a bull were sent as a present to Messrs. Patterson and Caton, of Maryland, by that distinguished agriculturist, the late Mr. Coke, (Earl of Leicester,) of Norfolk, England. In 1819, Mr. Hurlburt purchased from this stock the celebrated bull "Holkham," then a calf, and the next year two full-blood heifers, bred from the same importation, "Fancy" and "Strawberry."

These appear to have been the first pure Devons brought into New England, and from that time he spared no pains or expense in improving his stock, and it has often been remarked that "his herd of Devons had no superior in this country or England." Holkham proved a very superior animal, and continued serviceable till the age of seventeen years. Through the importations of Mr. Patterson and his own, purity of blood was maintained, while suitable crosses were secured.

During the thirty-seven years he was engaged in this business, he raised and sold over fifteen hundred head of Devons. His character as a man reliable for truth and veracity, long since secured for him a ready sale for all he could raise, and the demand for this stock has been continually increasing, receiving orders from nearly every State in the Union, while no effort has been required in the way of advertising or public sales to obtain this celebrity.

It would be difficult to estimate the increased value of the neat stock in the United States from the infusion of Devon blood from this herd alone. Much of the beauty of New England oxen is due at least to a trace of Devonshire, while the high grades, as fancy cattle, are unsurpassed."

The more recent importations of Mr. Linsley have supplied us with fresh strains of blood, and we can point with State pride to the herd of Mr. Blakeslee, of pure Patterson stock, and the herds of Gov. Hyde and others, as evidence that the Devons are not likely to degenerate among us, but having already marked the stock of the State more decidedly than any other breed, they will maintain their popularity.



Lith. of Kellogg & Bulkeley, *Hartford, Conn.*

AYRSHIRE COW DOLLY 3RD

Nº 55 H. B

Owned by S. M. & D. Wells, Wethersfield, Conn. Yields 5000 Qts. of Milk per year.

The first authentic notice of pure Short-horns in the State is of an imported bull introduced by Col. John Watson, of East Windsor. Since then various breeders have brought in bulls and cows from the celebrated herds of Messrs. Thorne, Lathrop and others, till the breed has become widely disseminated. In the hands of such men as Messrs. Sumner and Loomis the reputation of this breed is not likely to suffer among us. We have as good strains of blood as exist, and animals that will not suffer by comparison with any others of the breed in the world.

The first Ayrshires were introduced about the same time as these others, but they were not bred in their purity, but they left lasting marks upon the stock of the State. Mr. Samuel Bartlett thus gives their history in the Homestead. He says:

"Somewhere about 1822, there was a cow and a bull calf brought from Great Britain to New York, sent by Mr. Henry W. Hills, of New York, to the farm of the late Mr. Hezekiah Hills, of Windsor, Ct., lying on the west bank of the Connecticut river. Afterwards the cow was sold to the late Joseph Morgan, of Hartford, and the bull to Mr. Elihu Wolcott, of East Windsor Hill. Two of the heifers called Flora Hills and Fanny Hills, were sold to the late Henry Watson, of East Windsor, which produced several calves from his Short-horn bull Wye Comet, (1591, English Herd Book.) These calves, half Short-horn and half Ayrshire, were small animals but very fine. Flora was afterwards owned by Gen. Ralph Watson, and I think Fanny also, and produced many fine calves. As he was engaged in driving his cattle from home to sell, they became widely disseminated. Several of these animals were recorded as Short-horns in the American Herd Book, but they were well known in Hartford County to be Ayrshires, and a letter which I have from Mr. H. W. Hills, settles the matter beyond doubt."

The superior excellence of some of these Ayrshire and Durham animals gives peculiar interest to this statement. They passed as pure Short-horns, while their qualities seemed to ally them more nearly to the Ayrshires.

Old Cream Pot, the most celebrated, gave thirty-six quarts of milk per day, and made butter at the rate of eighteen lbs. six oz. per week. She was owned at one time by Mr. Sheafe, of Duchess County, who had several fine calves from her, from Short-Horn bulls, which promised to rival their mother in milking qualities. I own a cow from her, sired by imported Short-horn bull St. Lawrence, that has been the best cow for milk in a herd of forty.

In 1847, Robbins Battell, Esq., of Norfolk, purchased of S. G. Ward, of Lenox, an Ayrshire bull, and a cow of Capt. Geo. Randall, of New Bedford. These were afterwards sold to Mr. E. P. Prentice, but Mr. Battell still has their descendants. These cattle were not as large as some of the recent importations, but they were good milkers, and gave milk of excellent quality for butter. The importations of Mr. Pond in 1859, and the more recently established herds of Messrs. Wells, Collins, and others, are bringing the Ayrshires more into notice, and we doubt not they will show their effects on the milking qualities of our herds bred from them, both pure and mixed.

The introduction and culture of the Jerseys or Alderneys, has been more recent. The late John A. Taintor, of Hartford, imported more largely than any one else, as far as we have known, while the success of John T. Norton, of Farmington, and many others, mostly in Hartford County, as breeders, has given them a wide-spread popularity. It is a question yet undecided whether this or any other local breed will retain among us its own peculiarities, or whether, modified by circumstances, it will lose some of its points, and become even better adapted to our uses than before. To explain more fully: may we not expect that the small cattle of the Channel Islands, or of Brittany, will increase somewhat in size, and the Holstein or Dutch cattle, and the Short-horns will grow smaller, their milking qualities being retained, and as they become naturalized also become better for us?

The question is often asked, What is the best breed of cattle? In its plain, broad form, it can be answered about as easily as the question, What is the best kind of cloth? or, What is the best kind of leather? The uses for which the animal is designed, and the conditions in which he is to be placed, must be taken into the account, as much as in answering about the cloth we should consider whether it is to be used for a gentleman's coat, for sheeting or sails; or of the leather, whether for boots, harness or belting. Thus far, no one breed has proved better than any other for all uses or all conditions. So various are the uses that animals subserve, and the conditions in which they are placed are so different, that we can never expect to unite in one breed in the highest degree all the useful qualities of neat cattle. It then becomes an object for us to inquire what are the conditions which surround us, which we cannot alter, and the uses for which we require our cattle?

The surface of our State is mostly hilly and uneven, and the herbage, though nutritious and sweet, is often short and scanty. The climate is severe, requiring cattle to be protected at the barn about one-half of the year. Our proximity to market is the advantage which alone enables us to compete successfully with the more favored soil and climate of the middle and western States. This indicates that those products which are more bulky, and will not bear distant transportation, will be the most profitable for us, and accordingly we find the dairy the leading interest in most sections of the State.

The "Natives," so-called, made up, as they are, of a mixture of various breeds, give us some animals which are unsurpassed by any pure breed. We sometimes find a native cow whose milking qualities are as good as any pure blood animal, an ox that is kind, active and strong, first-rate in all respects, and again an animal is found that not only lays on flesh rapidly, but it is of a good quality and lies just where it should. Now this is just what we should expect from the known rules of breeding. The name native is a misnomer, for we know that it is but a little over two hundred years since the first cattle were brought into the country, and that it is almost an impossibility to find an animal that can trace back its pedigree for five generations with no admixture of foreign blood. Crossed with distinct breeds, they show the characteristics of those breeds. If we use a thorough-bred Devon or Short-horn bull with native cows, the progeny resemble the sire in great degree, that is, they appear to be more than half-blood Devon or Short-horn. Pure blood animals have the power of transmitting to their progeny their qualities in a greater degree than grade animals. This gives them greater value as breeding animals than their superior excellence alone would demand, and for the improvement of our farm stock they are invaluable. The exceeding value of fine, thorough-bred animals for breeding purposes, operates to prevent them from a fair competition with grades in the other uses for which cattle are employed. The finest Short-horns are not selected for steers to prepare for the slaughter; the milking capacity of an Ayrshire or a Jersey is not crowded to its full extent, because in so doing that other product, the calf, would in some degree suffer. In the Short-horn and the Devon the milking qualities have been still further sacrificed to the desire to get calves as often as possible, a calf every ten months paying better than the trifling gain from the milk. Hence it is that thorough-breds are rarely found which surpass some grades either for beef, work, or milk. Yet if we wish to breed the best stock for any of these purposes, we must resort to them.

I only give the united testimony of all successful breeders in saying that we must have pure blood at least on one side; that in improving our grade or native stock, we should use only thorough-bred bulls, and then we may calculate in securing in a very high degree the characteristics of the breed we may choose, that the pure blood will be stronger than the mixed, and will mark the offspring.

There is one question which perhaps we should have discussed first. Is it better for Connecticut farmers to raise their stock or to buy it? Apparently it is cheaper to buy than to raise our cattle, and when beef is the object, this is doubtless true. You can buy common two and three year olds for beef cheaper than you can raise them. Oxen also must come in the same class, unless you have conveniences for breaking them in. But how is it with milch cows? Milk is one of the leading objects in Connecticut husbandry. We are all seeking for this one thing. When you have raised a cow she is at home on the farm, she is wonted there, thoroughly naturalized, acquainted with all her mates, and readily accommodates herself to all the conditions which surround her, and those localities are rare among farmers that a cow will be worth so much more to the purchaser that he can afford to forego all these advantages. The time spent in looking up stray cows, the losses from hooking and other accidents, which are largely increased in a mixed herd; the fact that cows put in other herds, especially if larger, rarely do as well as at home, all tend to diminish the profits of purchase. Another argument in favor of raising our cows consists in the fact that some things are worth more than their money value, and among them I class a good herd of cows, raised on the farm, fed by the family, tracing back their pedigree to favorites whose names were household words, for they had been playmates with the children, and many pleasant memories of childhood were associated with them. Everything that gives interest to our calling, that gives soul and life to it, should be cherished, for the tendency of youth is to drift away from the farm, to seek some business which is supposed to require more mind and less muscle, while farming, of all other employments, is just now suffering for this want of thought and application of brains to its development. The chance of purchasing perfect cows, sound and true in every particular, is so small that most dairymen consider it even pecuniarily better to raise their cows, and with these added reasons, it would appear that few who rely upon the dairy in any form for their support can afford to purchase them.

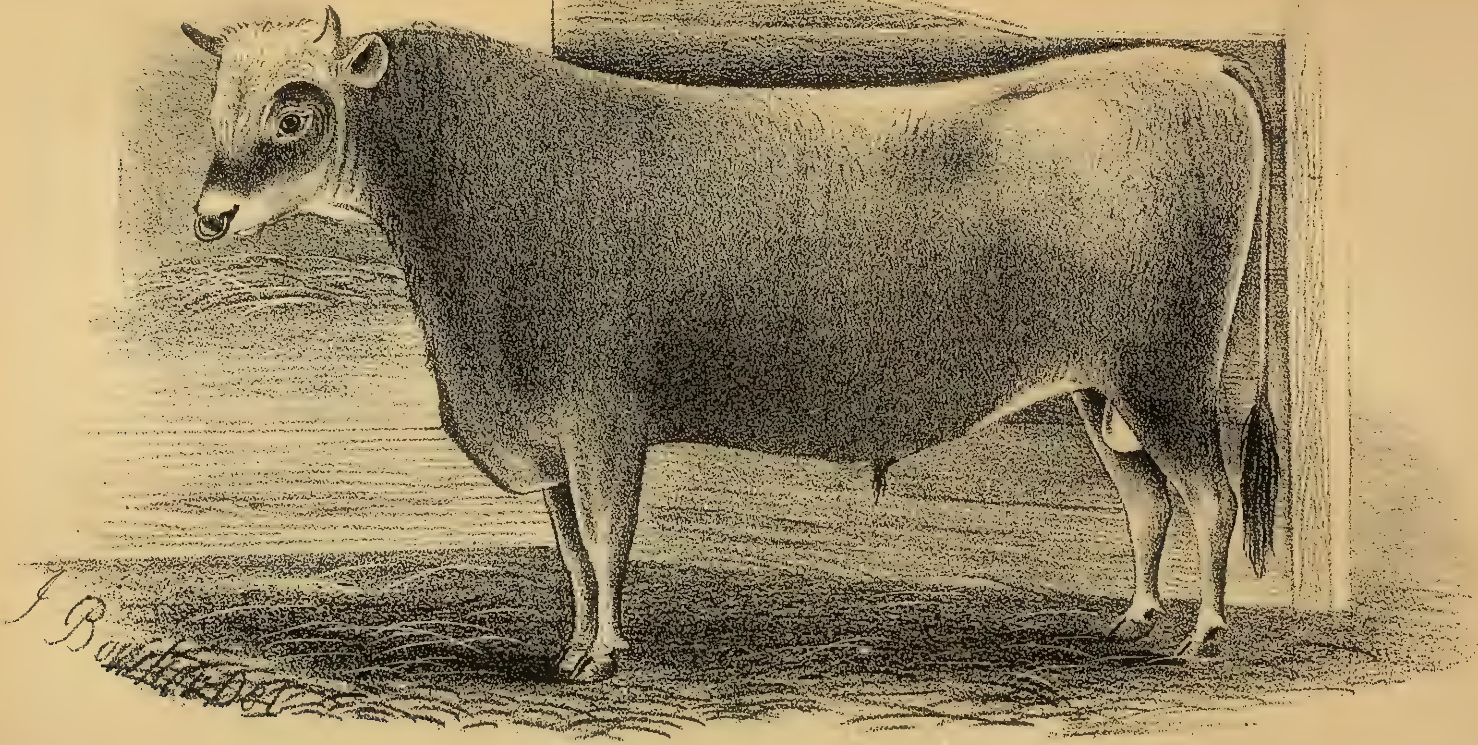
In determining what breed to select either for keeping pure or crossing, location and circumstances, with the use we design for our cattle, must settle the point.

In referring to each of the different breeds, we shall only notice those qualities which all admit them to possess in a higher degree than other breeds.

The *Short-horn* is the largest breed of cattle we have among us. Crossed with our common stock, size, early maturity, and disposition to fatten are improved. Some families are good milkers, and their grades are favorites in the dairy. They will give a large quantity of milk, but unless their feed is very rich and good, it will be of poor quality, as in fact it must be with all breeds, for the richness of the milk will always depend upon the quality of the feed. Where the pastures are rich and abundant, as in the Connecticut valley, they are deservedly favorites. Those same animals obliged to gather a subsistence from hard pastures, to climb the hills, and travel far each day, will give no larger returns to the pail, nor will they be in better plight than smaller and more agile animals. A pair of oxen weighing forty hundred will do no more ordinary farm work than a pair weighing thirty hundred. Keeping the additional weight costs something, even if it could be kept up at all on some farms.

The *Devon* is prëeminently the breed for work. Our correspondents, with scarcely an exception, give the Devons and their grades the preference for working oxen. Docility, strength, activity and beauty unite in making them favorites. They will glean a good living from scanty pastures, and when well fed their compactness of form, and symmetry, giving them little offal, makes them popular with the butcher. The milking properties of the cows vary in different families. It is claimed that their milk excels that of all other breeds in general good qualities, making a large quantity of butter of superior quality. The cows as well as the oxen are kind and gentle, and even the bulls rarely become vicious. They are the most widely disseminated of any breed in Connecticut, and to them we owe the celebrity of our working oxen.

Calves from this breed are usually small compared with those from Short-horns. Some consider this as an advantage, as the cow suffers less from parturition, and the growth of the fœtus makes a less draft on her than when it is larger. In my experience the calves from a Devon bull weigh nearly twenty-five per cent. less than from a Short-horn from the same lot of cows.



JERSEY BULL "ALBERT"
At 20 Mo. old.
PROPERTY OF S.W. ROBBINS, WETHERSFIELD, CONN.

The *Ayrshire* is prëeminently the breed for milk. It is not claimed that they are as good as the Short-horn or Devon for beef or work, having been bred particularly for the dairy, and especially with a desire to the production of cheese. Coming from a rugged northern climate, we find them hardy animals, of moderate size, able to endure as much hardship as any of our native cattle. Bred solely for milk, they have few qualities to recommend them if this fails. It is claimed that for the amount of food consumed the Ayrshires and their grades will give more milk than any other breed; that the same food which will sustain three Short-horns will keep four Ayrshires, each animal giving the same amount of milk, and it is admitted that upon many pastures the Ayrshires would thrive where the Short-horns would starve.

Their extensive introduction into the State has been more recent than the breeds previously named, and more knowledge of their merits is required to bring them into general esteem.

The *Jersey* has qualities which are peculiar, and eminently fitted for certain uses, yet this breed can hardly aspire to favor among us as farm stock. Their milk is of a peculiar character, more yellow than common, and the cream separates more perfectly than in any other breed. The cream and butter has a richer color than from other cows, and has a peculiar taste, and brings an extra price.

The Jersey cow being small and deer-like in form, and prettily marked, is deservedly a pet upon the gentleman's lawn, or where she may receive frequent visits from the family. At the same time that she is small she is tender and delicate, and requires the best of food and care to make fair returns in milk. The cows do not herd well with others, and the bulls early become vicious. This breed makes no claims as fitted for beef or work. For their peculiar place they are just right; out of it they cannot be considered as desirable, and cannot enter into general competition.

Our location and particular wants, then, should govern us in the selection of a breed, judgment and circumstances the variety of that breed. For rich intervale lands we should recommend the Short-horns for beef or milk, the Devons generally for working oxen, and on most of our dairy farms of hill and valley the Ayrshires.

How to keep our cattle is quite as important as the breed we shall keep. While over feeding is as bad as too short keeping it is by no means as common. Very few of our farmers over feed, while too many of our cattle are lowing around the barns in winter and spring and come home from the pastures looking lank and hungry. Relying upon hay alone in winter and pasturage in summer, these are likely to vary in amount or to fail almost entirely. Good farming demands that we should make up this deficiency from some other source. Sowed corn is the best resort we have for summer and autumn and also to provide against a scarcity of winter forage. There is no crop more sure, escaping frosts and enduring droughts that are fatal to many others. It may be sown in succession from May to July, even after the supply of hay for the winter is determined and thus we may provide in the easiest way against a short hay crop. The principal crop should be sown in June as soon as the hurry of planting is over. It will grow faster than that sown earlier or later, and may be cured soon after haying while the weather is hot.

The simplest rules of feeding are too often neglected and thus our profits are lost. Young stock should be kept all the time improving, whenever they stand still or fall away we are losing our feed. It requires a certain amount of food to keep them stationary. There is profit only in what they consume beyond this. A lot of cattle comes out in the spring no heavier than they were in the autumn, and where is the gain? They have consumed a barnful of hay, but what has the farmer to show for it? Their increased value in growth with the manure should pay for the hay. A more generous system of feeding would show improvement week by week. If the hay is so poor that cattle will not eat enough to make any gain, what is it good for but manure. Now am I not close on to some of the weak points in our system of husbandry? Much of our hay is cut too late, and cured so badly that it will just keep cattle along. They will not thrive on it, howsoever much they may have. Often we do not get for our hay one-half the market price of a good article. If we sell the hay, the farm goes too, for generally we cannot replace the manure. Cannot our system of feeding or rather practice, for it is no system, be so improved as to stop this loss? Theoretically it can, and also practically when we know enough to put theory in practice.

The most perfect system of feeding is when an animal consumes the largest quantity of food that it can perfectly digest and assimilate. This often requires in addition to the hay and straw and other cheap food of the farm, roots or grain in some form to aid in the more perfect digestion and assimilation of the coarser products.

The above proposition is subject in practice to various modifications. For instance it may not be profitable to crowd an animal on at some period of its growth if we know we cannot maintain this condition afterwards. Falling away at any time is positively to be avoided. The animal may be pampered, fed on rich food till the coarser is rejected. The system may become disordered, a liability to disease generated by too full feeding. A judicious system avoids this as well as the opposite. An animal properly fed, makes returns either in growth, milk or fat. That system is best which pays the best interest on the capital invested, taking into account the improvement of the capital stock, the animals and farm, or their deterioration. Selling hay from a grass farm will no doubt bring the largest immediate income, often twenty-five per cent on its value, yet the loss to the farm is so great that no one can practice if for a term of years.

Our only resort then is to consuming it on the farm, and the value we get each week from our animals in milk, work, or increase or growth, if it is done from the farm, is the measure of our success. If grain is bought its cost less the value of the manure made from it, must be deducted from our weekly gains.

Brought to this point many a yard of young cattle will make a poor show of profits. Now what must be done? Stop raising cattle? By no means, but raise better ones.

The same feed or a very little more, that will make a common animal worth fifty dollars at two and a half years old will make another better one worth seventy-five or one hundred dollars. The profit lies altogether with the best animal. How can one secure this perfect consumption, digestion and assimilation of food. Good grass or good early cut, well cured hay needs no addition, that animals may eat it all, digest it perfectly and use its nutritive properties in growth or milk. Once habituated to it, they will only eat what they can use to the best advantage. When we depart from this in the quality of our pasturage or fodder, if we expect the animal to thrive in the highest degree, economy may dictate that it is better to give ten dollars in value in ten months than in five because the extra feed may be comparatively more costly. Certainly it is true economy to gain something all the time and never to retrograde. Suppose we have straw, stalks and other coarse fodder, fed in the usual way, the profit is very small, will not the increased profit warrant cutting, steaming and the addition of a little grain? Some will say, "poor farmers, men of small means cannot afford all this expense." If a rich farmer cannot make his farming pay without it, can a poor one do so? It requires as much skill to spend money well as to make it. Does it not require as much skill to feed judiciously our barns full of fodder as it does to fill them? Yet how carelessly do we spend in one six months, that which we have so carefully gathered during the others.

Feeding is a science as yet little studied and developed, and to this remark the answers to the inquiries on cattle of some of our best feeders give point. Says one, "the expense of raising I cannot tell, for what they eat grows out of the earth, hay and grass." Says another, "My practice in feeding cattle for work, dairy or beef, is to give them the best the farm affords and all they will eat."

Sound doctrine as far as it goes, but does it reach the point we are looking for? We want more certain knowledge than we have yet got to guide us in our operations.

The business of selling milk gives us a more perfect knowledge of our daily and weekly receipts and expenditures, than any other branch of farming. I have long observed that such farmers alone adopted anything like a system of feeding, they count the cost and profits of their husbandry. This by inducing a better system of farming, rather than because selling milk is so much more profitable than butter and cheese, makes with better farming more thrifty farmers.

It is rather in the judicious use and combination of the feed that one farmer excels another than in its greater richness and value. Two farmers will feed the same amount of hay and grain to the same amount of stock with very different results. The coarser hay and straw must be fed when the weather and the use of the animals will allow it. This food will not answer for animals at work or giving milk. They cannot eat and digest enough to have a surplus for these uses. Grain or roots alone or in chief are too costly and unsuitable. As an addition to cheaper food their use becomes profitable. Even here nice judgment is required. The beginning or increase as well as the diminution must be gradual or we lose more than we gain.

It should be our object to keep all the stock we can, yet overstocking is carefully to be avoided. It is better to have a surplus of fodder than to fall short. Every farmer should plan to have a few tons of hay over every spring. It does not hurt by keeping and will surely be wanted in some season of scarcity; while it is bad policy to sell hay it is very unprofitable to be obliged to buy it. We have been accustomed to look out for the winter fodder and let the summer supply take care of itself. This care of pastures, that is no care at all, has resulted in their general and decided deterioration in many parts of the state.

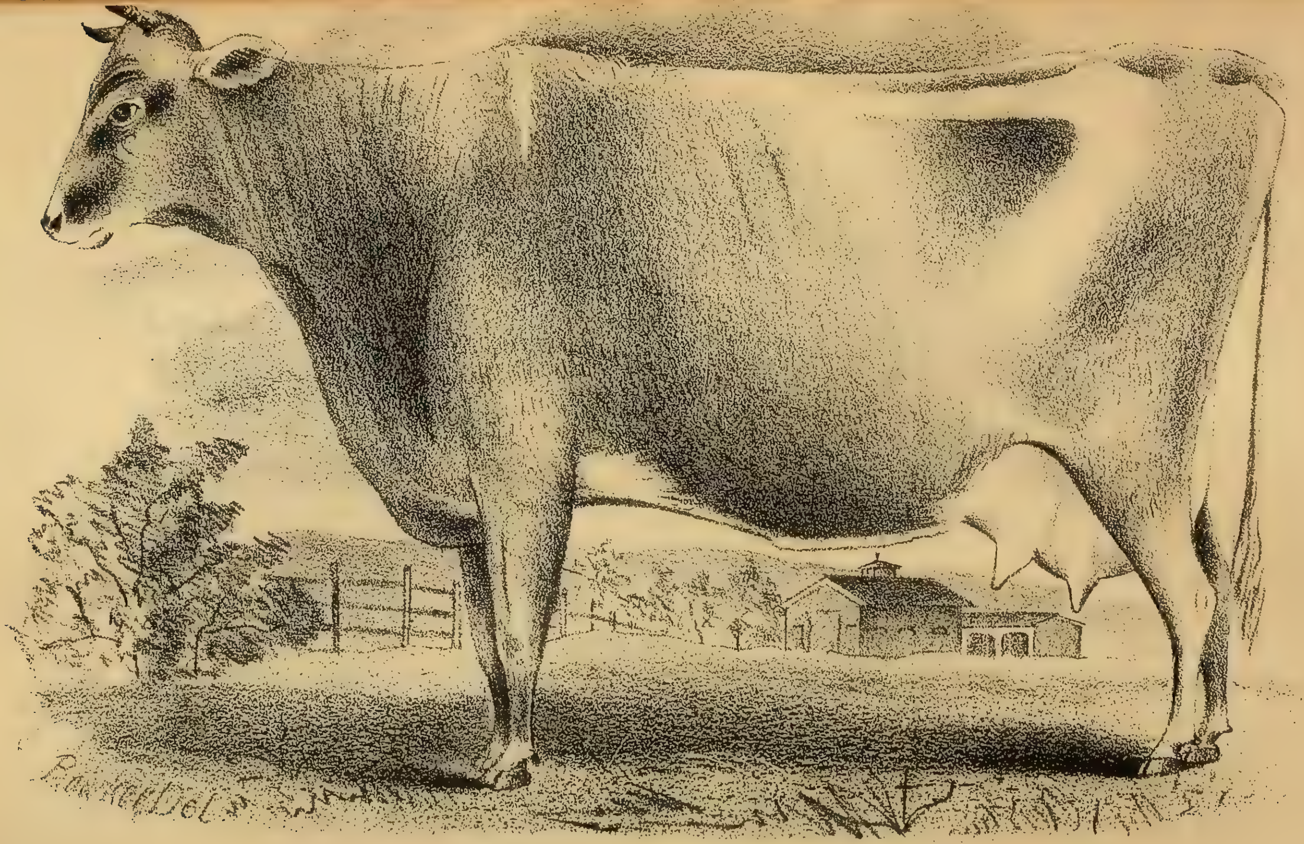
Pastures are sometimes injured by too close feeding, and often by not being fed close enough, especially in early summer. Pastures in which the grass goes to seed in June and July are not as good late in the season as if they had been fed closer. This is particularly true of wet pastures where the grass cannot be eaten except when it is young and tender. It is true that if there is no surplus in June and a drought succeeds, the cattle and pastures both suffer. This contingency requires the corn fodder. As far as my observation extends, the pastures improve and the cattle do better, especially milch cows, if the feed is kept rather short.

We are advised to change our pastures often to give our cattle fresh feed. From my observation I think this an error, to say nothing of the saving in fencing. The cows are more quiet and do better when they can have their entire range at once than when often changed. When turned into fresh feed they eat too much for a few days and then too little. Accustomed to no change of pasture, they are more quiet and eat the coarse grass when there is a lack of that which is better. There are of course exceptions where a choice piece of newly seeded land may be shut up for a time with advantage.

The principal objection to a large single range is that the cattle have favorite lying places usually near the entrance of the field, and these places become enriched at the expense of the rest. This can in part be obviated by salting them often in some other part of the field, as this will draw them there and a more equal distribution of the manure will be secured.

The discomfort in which animals are allowed to remain often balances high feeding so that there can be no improvement. Cold, wet, filth, fear, disturbance and irregularity of every kind interfere sadly with the thrift of animals. A milch cow loves quiet of all things. Rapid driving to or from pasture, worrying by dogs, or any fretting not only dries up the cows, but impairs the quality of the milk. A cold rain storm in autumn, while the stables are full of stalks and pumpkins often shrinks the milk fifty per cent, and what is lost at that season is rarely regained. More cows are lost from neglect and exposure after calving than any other single cause.

Water is as essential as food, but too often in winter it is to be had only in small quantities and can be procured only with difficulty. How many cattle this winter have been obliged to wade through snow drifts a hundred rods to the spring or stream dug out of a snow drift, for a little sup of water ; once a day they will make the journey, and shivering with the cold water and the exposure they return to shiver



JERSEY COW PANSY 6TH.

At 6 years old.

PROPERTY OF S.W. ROBBINS, WETHERSFIELD, CONN.

by the side of the barn. Do we wonder that stock raising is condemned with such facilities? Provide either running water or a supply from wells or cisterns in the barns or yards and a large source of loss is removed, or rather we add largely to our profits. Water is as necessary as hay for cattle, and every day they lack a proper supply we lose the hay they eat.

With good stock kept warm, clean and comfortable, with plenty of water and food, cattle husbandry, either for work, growth, beef or milk, is profitable for the farmers of Connecticut, and the degree of their success will depend upon how far they secure these different conditions.

REPORTS OF THE DELEGATES TO THE COUNTY EXHIBITIONS.

The following circular was sent to the delegates appointed by the Board to visit the various Agricultural Fairs in the State.

West Cornwall, Conn.,
Aug. 19th, 1867.

My Dear Sir:

As Delegate from the State Board of Agriculture to visit the Fairs held in————County, you are particularly requested to notice any thing in the Agriculture of the County that is peculiar to it, either in stock, crops or mode of husbandry.

What are the artices sold and in what markets?

Is the County improving in its Husbandry?

What the character of the exhibition in its different departments?

Condition of stock and crops in the county?

In what way can farming be rendered more profitable in the section visited?

Do not be confined to these suggestions but mark whatever is worthy either of praise or blame.

T. S. GOLD, *Secretary.*

HARTFORD COUNTY.

As delegate from the State Board of Agriculture to the Fairs of Hartford County, I have to make the following report:

The Hartford County Agricultural Society held its 32d exhibition at Hartford, October 1st, to 4th, inclusive. The Executive Committee of the Society increased their premium list largely the past year, and in addition opened competition to the entire State. Favored with beautiful weather, the prime requisite of all our open air fetes, their enterprise was awarded by a full turn out of the breeders located in this fine County and also from other and distant parts of the State. We first visited the grounds on Thursday, the day of the Cattle Show, and found every arrangement perfected and an efficient board of management in charge. The display of working oxen was very large, comprising many heavy cattle and all of a superior quality. A string of ten yoke from Watertown attracted much attention from their fine condition. There was a fine display of Swine, of which the Sefton breeds appeared to be the favorite, also a large number of Fowls in very great variety. Sheep were not exhibited to any great extent.

The acknowledged feature of the exhibition however was the very fine display of herds of thorough-bred cattle—Alderneys, Ayrshires, Devons and Durhams exhibited by the prominent breeders of the State. It was an exhibition which would have amply repaid a journey of many miles to see and although the attendance was good, we could not but regret that the grounds had not been entirely filled, as the opportunity to compare the different breeds as they were so admirably arranged upon the grounds was an occasion which should have been more widely accepted. If this Society continues the very liberal course marked out the past year, we can but believe that another season will see their grounds much better filled with the farmers of the County and State.

In the evening we visited the display of fruits, flowers, manufactured articles, etc., in the new Music Hall which had been secured by the Society for this purpose. This large and well arranged department of the Fair was much better patronized than the grounds on Albany Avenue, in fact it was almost impossible-to make way through the dense crowd that filled every part of the room. The articles on exhibition here comprised in addition to almost every product of the farm a very fine display of manufactured articles, showing that the Society has the cordial co-operation of the industrial classes of the County. The most interesting feature was the very large and choice collection of fruits, especially of pears and grapes for the culture of which this district is admirably adapted.

The following day was devoted to the display of Horses, with moderate amounts to be paid for speed only. The Horse Fair at New Haven had drawn away several of the more famous horses owned in this vicinity, but the exhibition was nevertheless very interesting, especially in young stock, showing that the raising of really good horses is found to be a paying investment of money.

A very agreeable feature of this Fair was the daily collation in the President's tent, where opportunity was afforded to test the quality of the thorough-bred Sefton pigs from the model farm of the Vice President of the Society, (David Clark, Esq.)

The Pequabuck Agricultural Society held its 3d annual Cattle Show and Fair, at Bristol, October 9th. We arrived upon the ground (a beautiful hickory grove) about noon. The long strings of cattle from the neighboring towns were already arranged upon the track and made a beautiful display, as the towns seemed to have vied with each other, not only in sending their finest cattle but also in the decoration of their respective carts or wagons, which contained every variety of farm products most tastefully arranged. There was a good but not large exhibition of other stock, and we noticed fine Alderneys and Ayrshires with Devon and Durham grades, also a few Sheep and Swine. The large tent was entirely filled with products of the farm, the loom, and the shop, and attracted great attention. The attendance was very large and from the care with which articles were examined and compared with former exhibitions, we could not fail to see that this Society has the countenance and support of the entire community among which it is located, and bids fair to make for itself a name among the Agricultural Societies of the State.

The above were the only Fairs of which we received notice, but we have since heard that one or two others were held in the County, and have to suggest that another year the Societies be more prompt in forwarding the dates fixed for their Exhibitions to the Secretary of the Board.

J. DEMING PERKINS,
Delegate to Hartford County.

HARTFORD COUNTY.

As one of the Delegates appointed by the State Board of Agriculture to visit the Fairs in Hartford County, I beg leave to make the following report.

Owing to my other engagements I was not able to visit the Fair held in Hartford but one day, therefore can make only a very brief report.

The day I was at the fair was the day for the exhibition of cattle, sheep, swine, poultry, and agricultural implements, at the fair ground, and the display in these several classes on that day was much better than at the fair last year, which I visited, both as to the number shown, and the condition of the stock on exhibition.

The cattle exhibited made a splendid show of the several breeds of thorough-breds and also of grade and working cattle, both as to the number on exhibition, the quality of the stock, and the condition they were in, and spoke well for the success of the farmers of the county in breeding, and the care of their stock.

The large trains of working oxen on the ground from some of the towns were very fine, the cattle large in size, finely made, and most of them in good condition, and judging from those which were exhibited on the track, in handling a loaded cart, were well trained.

There were also some very fine grade Short-horn steers on the fair ground that were in very fine condition. The Devons shown were very beautiful specimens of that noted breed of cattle, and were in fine order, and attracted very great attention, particularly the fine herd shown by the Hon. E. H. Hyde, of Stafford.

The Ayrshires were shown in good numbers, and most of the stock of this breed on exhibition were fine, and some very superior ones were shown by the Messrs. Wells of Wethersfield; Mr. Pond of Hartford also had some very good stock of this breed on exhibition.

The Alderneys were shown more numerously than any other breed on the fair ground, and are, I think, more generally bred in the county than the other breeds of cattle. There were very superior bulls, cows, and heifers of this breed, and the stock shown were generally in very good order for the breed, as they are, I think, the hardest of all stock to keep looking well.

There were a few Short-horns on the ground, but not what there ought to have been from the reputation of the breeders of this stock in the county, neither was the stock shown the best that could have been shown, I think.

The exhibition of sheep was very small, there being but a few pens, and the most of these were exhibited by a city butcher as fat sheep. In this department the exhibition ought to have been very considerably larger than it was, for the credit of the county and the fair, and also for the credit of the breeders of the choice breeds of sheep which are in the county.

Swine were exhibited by a few breeders, and some superior Seftons were shown by David Clark, Esq., bred from stock of his own importation; but the others shown as pure breds did not do much credit to their several breeds.

Poultry was exhibited quite largely, of a great variety of breeds, among which there were some very fine fowls, and the competition for the premiums offered by the society in this department was quite spirited.

There were a few agricultural implements and machines on exhibition, but the competition was quite small.

I spent a short time in Music Hall, where the society held their exhibition, where there was a very extensive display of fancy articles, manufactures, products of the dairy and farm, fruits, and other articles, which filled the large hall as full as could be shown to good advantage.

The fruit on exhibition was quite extensive in quantity, and many of the specimens were very large in size for the various kinds of pears, peaches, apples, and superior in coloring and fairness, and although the past season had generally been poor for fruits of all kinds, yet the display was larger, and the fruit of better quality than I had seen at the several fairs of the county which I have attended in past years.

My limited time prevented my making inquiries on the several subjects contained in the circular sent to the delegate by the Secretary of the Board, consequently I am unable to make any reply to them.

I trust that my colleague will make a more extended report of this fair, and also of the other fairs of the county, as my engagements were such that I was not able to attend them.

HENRY L. STEWART,
Delegate to Hartford County.

NEW HAVEN COUNTY.

New Haven County embraces a variety of soils. The region on Long Island Sound is mostly of a granite formation, while in the Quinnippiac valley is found red sandstone, and in several towns here and there ridges of trap rock.

The soil is to a considerable extent fertile, and many excellent farms are found, yet probably five-eighths of the surface is better adapted to pasturage than tillage.

In the seaboard towns there is much land fertile, warm, free from stones, and easy to cultivate, while it has the advantage of being enriched with sea manures; the salt meadows also by their abundant yield enable the farmers to augment largely their manure heaps. In all the towns in the county there is much broken land, suitable only for the growth of wood and timber. There is also much hilly land, best suited for sheep husbandry, yet very few sheep are kept, and those are mostly inferior animals.

The neat stock of the farms consists of ox-teams, generally excellent, (many of them brought in from other sections,) also small dairies of from two to eight cows, and a few young cattle; near the cities and larger villages most of the calves are slaughtered.

The horses in most of the towns are ordinary, but in many places a lively interest has been manifested in their improvement, and some very fine single and matched teams have been exhibited at the several fairs.

Swine should receive greater attention. There is no reason why any neighborhood in the county should not have the best breeds. Many store hogs are procured from drovers of refuse shoats, bought at a low rate and driven in from New York State. A well bred animal raised at home would be far more satisfactory to the owner.

Of the productions of the county, grass stands first in importance. The crop this year was in bulk more than usual, but was somewhat damaged in harvesting.

Indian corn stands next. The crop was, as a whole, below the average.

Potatoes are a staple crop in some towns, especially on the seaboard, whence they are sent by coasting vessels to New York market. The crop suffered much from blight, and was less than usual.

Oats are a crop well adapted to the soil, and were generally good. Rye is the favorite cereal of the county. The crop this year was fair, fully an average. Wheat is comparatively little raised. The crop this year, where it was well and seasonably put in, was good, the yield per acre exceeding on an average the yield of rye. More attention should be given to raising wheat in Connecticut. Barley is but little raised; yield fair. Buckwheat, a very light yield.

Tobacco is much less raised than two years since. Onions are raised considerably on the seaboard for market. Yield light this year. Turnips, carrots, beets, &c., generally good. Sorghum, a small yield.

Fruit—apples, pears and plums—crop very meagre indeed. Peaches, few raised in the county; fair crop this year. Small fruits, especially strawberries, in abundance.

Of the fairs in the county, the first was in Oxford, Oct. 1st. The day was fine, and much interest was manifested. There were seven entries of single and three of matched horses; on the whole very creditable. There were eighty pairs of working oxen, generally good, though rather thin in flesh; some were very fine, and excellent workers. The show of breeding stock was small. Some grade bulls and six cows and heifers, tolerably good, being all.

Though the town seems well adapted to sheep husbandry, few are kept, two Atwood merino bucks, so called, being the only specimens on exhibition. Of poultry only three coops were shown.

Of potatoes there was a good show as to variety and excellence, also sweet potatoes, turnips, beets, pumpkins, squashes, water melons, tomatoes, &c., all very good.

The show of apples, pears, peaches and grapes was not large, but good, and we infer that Oxford can produce fine fruit.

The exhibition of domestic manufactures, fancy work, and flowers entitles the ladies to much praise; also the butter, six samples, and the preserved fruits. Some excellent honey was also exhibited. As a whole the fair was good.

The Farmers and Mechanics Fair, of Guilford, was held Oct. 2d. The weather favored, and there was a large attendance.

Ninety-five pairs of oxen from the different districts, was the great feature of the exhibition. In these, as in those shown at Oxford, Devon characteristics were apparent. As a whole they were good workers, uniform, excellent, and rarely surpassed.

The show of breeding stock, swine, sheep and poultry, was very small. There were some fourteen entries of horses, generally very good.

In the hall the show was excellent, embracing thirty-three baskets of potatoes, in great variety; four of sweet potatoes, some weighing three lbs. each; besides onions, squashes, tomatoes, peppers, water melons, ornamental gourds, thirty-seven baskets of corn, and also other grains; thirteen specimens of butter, and five of cheese; all excellent.

The display of fruits, considering the scarcity, was excellent. There were forty-six baskets and plates of apples, twenty-five of pears, six of peaches, besides cranberries, quinces, and all the leading varieties of native grapes, twenty-five cans of preserved fruits, with a choice collection of flowers, fancy glass-work, seed-work, and shell-work, and many other things space forbids enumerating. The show in the hall and of working oxen was excellent; the special lack was in breeding stock, and sheep, swine and poultry.

The Fair of Milford and Orange was held at Milford, Oct. 3d. There were some fifty to sixty pairs of working oxen from Milford, and fourteen pairs from Orange. As to quality this was the best show of working oxen in the county; considering numbers and quality, Guilford surpassed it; both excelled the county fair in this respect. A beautifully decorated cart came in from the eleventh district, adding much to the display. The trial of working oxen showed well-trained cattle, good teamsters, and prompt management by the marshal, who understood his business.

The show of horses was good; of breeding animals, sheep and swine, very small. Milford should wake up to more interest in this direction.

The poultry display would have done credit to a State fair, there being twenty-eight coops, the Brahmas taking the lead; all excellent.

Fruits and vegetables, which were excellent, were exhibited in a large tent. There were sixty-six baskets and plates of apples, embracing twenty-five varieties, the Baldwin taking the lead, as at all the other fairs in New Haven county; in fact, it is the leading apple of America. Twelve varieties of pears, all excellent; also the leading varieties of native grapes, and five varieties of foreign grapes. Of twelve plates of tomatoes, the Tildens were best, as elsewhere.

Of potatoes, turnips, onions, beets, carrots, parsnips, celery, water melons, pumpkins, squashes, ornamental gourds, peppers, and sundry other things, there was a fine display, as also of corn and grains.

The show of butter and cheese was small.

Of carriages, musical instruments, manufactured goods, and fancy work there was great variety. The towns of Milford and Orange abound in agricultural resources, if we may judge by this fair.

The County Fair was held in Meriden, on Wednesday and Thursday, Oct. 9th and 10th. The weather was good and the attendance large.

There were 108 entries of neat cattle. Of working oxen, there were ten pairs from Cheshire and twenty-eight from Meriden. Two pairs from Meriden weighed respectively 4,030 lbs., and 4,260 lbs. In working oxen this exhibition falls behind any town fair in the county, but not so with breeding animals; in this respect the county fair far exceeds all the town fairs combined, embracing very fine Short-horns, Alderneys, Ayrshires, and Devons, with their grades, and choice natives. A few of them had plain, authentic pedigrees attached; this is a matter that cannot be too highly commended; people attending fairs seek information, and in this way they obtain that which is exact.

Fine fat cattle were exhibited by the president of the society, a mammoth pair from Wallingford, weighing 5,000 lbs., also a pair from Cheshire, 4,800 lbs.

The exhibition of sheep was fair but not large, some 25 head being entered, mostly by one exhibitor from Cheshire; they were of the middle and long-wooled breeds.

There were twelve entries of swine, very fine, representing the Chester County Whites, Suffolk and Sefton, and Grass breeds.

The poultry department was very full and excellent. There were twenty-five varieties of fowls, five cages of ducks, and five of pigeons, making in all forty-three cages, contributed principally by two exhibitors.

Horses were exhibited at Bradley's Park, Oct. 10th. There were fifty-six entries, making a display creditable to the county. Meriden was well represented by several pairs of beautiful matched horses. The number of entries was double that of the last exhibition held by the county society.

There was a good number of agricultural implements, Johnson & Co., of New Haven, exhibiting 130 articles, and Bradley, of the same city, 158 articles under this head.

There was little butter and cheese; grains and vegetables in abundance.

Of fruits a good show for the year, mostly from Meriden. In apples, Baldwins, Peck's Pleasants and Rhode Island Greenings took the lead; twenty varieties were exhibited, all excellent. Also thirty varieties of pears, some choice specimens. There were six varieties of foreign grapes, also Catawba, Delaware, Israella, Iona, Concord, Diana, Clinton, and Allen's Hybrid, all very good. Neither was the floral department neglected. There were beautiful cut flowers, especially dahlias, of which a finer collection is seldom seen.

Manufactured goods were magnificent, embracing Britannia ware, and various articles of hardware, mostly from the shops of Meriden. Space forbids the enumeration; suffice it to say that it was ten times greater than at the last county fair. With musical instruments, sewing machines, and ornamental and fancy work, every available space in the hall was filled.

The attendance throughout was good, and there is reason to believe that in no other way can the interests of agriculture be better promoted than by the encouragement of agricultural fairs.

There are many things to encourage farmers in New Haven county. The cities of New Haven, Waterbury and Meriden with manufacturing villages, furnish a good market for every production, and it is a fact worthy of note that the farms of Connecticut scarcely produce enough to supply one-third of her inhabitants.

Why, then, should not every available acre be improved and put to its best use? With the hundreds of acres of rough pasture, why are not the best breeds of sheep introduced, yielding, as they certainly would, a heavy profit to the owner? Why are not thorough-bred bulls employed in every neighborhood, in place of the uncertain grades now so generally used, thus doubling the value of the neat stock in the county?

Why is land so well adapted to the production of fruit turned entirely to other purposes, while we import apples from the west? When young orchards are transplanted, why are they ruined by crops of grass and grain, and the browsing of cattle, when care and good cultivation would insure the best results? It may certainly be said that the agricultural resources of New Haven county are good, and if properly developed would add much to the wealth of the State.

Let the farmers in all the towns and districts organize *Farmer's Clubs*, and communicate and receive by way of mutual consultation and discussion such information as shall be of most importance and value. In this way the best stock, fruits and crops for each locality can be learned and introduced; the best modes of augmenting and saving manures can be studied; theory can be compared with experience; many choice seeds and plants may be exchanged or disseminated; the best fruits and breeding animals may be secured for general improvement; humbugs of all kinds may be exposed; the best labor-saving machinery could be decided upon and adopted, and good taste, beauty, and a higher degree of profit result to the whole agricultural community.

P. M. AUGUR,
Delegate to New Haven County.

NEW LONDON COUNTY.

In compliance with the duties imposed upon me by the State Board of Agriculture, and in accordance with instructions received from the Secretary, I was on duty at the Fair in New London County, October 9th, 10th and 11th, and submit the following report:

As the first day, Tuesday, was spent in getting articles together and arranging them for exhibition, I did not think it advisable to attend until Wednesday; and then did not arrive in time to witness the exhibition of town teams; but was informed that although not large, it was very creditable.

On entering the grounds I was cordially received by the officers of the Society; one of whom politely conducted me to a spot within the ring, to witness a trial of working oxen, or rather steers, from three to four years old. I was delighted with this performance, showing alike the skill of the drivers and the docility of the teams.

A load of stone said to weigh 5000 lbs. was drawn around a large ring, and backed some distance by the various pairs with wonderful ease. Although the work was generally well done, there was quite a difference in the manner in which it was performed. Some pairs started exactly alike, or together, walked exactly in the same measured tread, with their enormous load, moving it steadily onward, while others would start one at a time, and, although in some instances, much the heavier cattle, did not do their work as easily as the smaller ones, that were much better *trained.* If the Society would for a few years in succession offer a premium for the best broke pair, and if the judges in making out their awards would take that more into consideration, we should soon see a very marked improvement in this department. As much necessity exists for the thorough training of oxen as of horses.

I then took a stroll around the grounds to see the cattle in their pens. Here I found a good exhibition of Cows, Bulls, and young cattle, consisting of Devons, Alderneys, Ayrshires and grades, numbering about the same as in former years, although as a whole there was a marked improvement in quality. I found them comfortably housed in good commodious sheds, sufficient to shelter them from the pelting storm, the scorching rays of the sun, or the chilling winds of a frosty October night. This is as it should be. Much praise is due to the members of this Society for the humane feelings they have manifested towards this class of animals, and I think this is one of the best features of the Fair, and would say to members of other societies, witness these accommodations, go home and do likewise.

The show of sheep and swine was small, not what it should be at a County Fair. I then went through the building, where I expected to witness such an exhibition of fruit, grain and vegetables as would grace a *World's* Fair. But lo! and behold! The show was lean, and it pained me to witness the unoccupied space upon the tables. There was a few apples, and other fruits, though not many plates of more than average excellence.

The show of vegetables I think was the poorest I ever saw in that building. There were a few nice potatoes, while others were painfully poor. A few squashes, mangel wurtzels, beets and carrots, none of which were much above mediocrity. Cabbages were good but few in number. I think in this department the farmers of the County with a little exertion could have made a more creditable display. There was some butter in firkins, and the show of ball butter was large and nice. Bread and cheese looked well what little there was. The chief show of grain that attracted attention was corn, which was very handsome. There was quite a display of wares, for sale by dealers and manufacturers out of the county, a good thing no doubt for the exhibitors, and interesting to purchasers, but how far these things will go to promote the interests of agriculture, manufactures and mechanic arts, in the county I leave my readers to judge. Notwithstanding the weather was all that could be desired, the attendance on Wednesday was so slim that there was no difficulty in getting about to see all there was to be seen.

Thursday the weather was all that could be desired, the air cool and bracing, and every thing seemed to say that this was the great day of the Fair. The first thing on the programme, was the plowing match which I was in time to witness. There were five competitors, all doing their work so well that it required a practiced eye to discover the superiority of either, and it was a wonder to me that men who could make such a display and show so much skill in turning a furrow, should make such a failure on grain and vegetables.

Horses both for use and pleasure were not lacking either in numbers or merit.

In the afternoon came the trotting, or racing, and this as was manifested by the crowd, was the *great* attraction of the Fair. The crowd of spectators was said to be larger than on any single day in the history of the Society, and more than made up for the thinness of attendance on Wednesday. There must have been in and about the grounds, a thousand vehicles of all descriptions. The enclosure within the track was filled and all available space outside the rail was occupied. Apparently all other interests were lost sight of in the dust and smoke of horse racing. How long shall these things be? How long shall our County Societies foster fast horses detrimental to many other paramount interests? The horse certainly is a noble animal, and while I would give him the position which his merits demand, I would not do it in such a manner as to interfere with other branches of husbandry.

New London County Society have offered for fast horses, (omitting fractions) *nine* times as much as for vegetables; *seventeen* times as much as for grain; *twenty-five* times as much as for apples; and almost *five* times as much as for all these three interests combined. They also offered more than *seven* times as much for fast horses as for working oxen.

Now let me ask one question for those who read this article, to reflect upon.

Which for the next fifty years will be the most benefit to the human race, the cultivation of fast horses, or, either of the above named articles? And now I have told you in the above paragraph what I consider the worst feature of the fair.

I repaired to the enclosure again Friday, October 11th, where I found the exhibitors removing their goods from the building. The programme for the day upon the track was horse trotting of course.

This was little to my taste. The empty tables and deserted building warned me of the close of the Fair. In a pecuniary point of view, the exhibition was a success, as the President informed me that their receipts were about two thousand dollars.

RALPH W. ROBINSON,
Delegate to New London County.

FAIRFIELD COUNTY.

The Fairfield County Fair was held at Norwalk, Sept. 24, 25, 26 and 27. Here we can say with satisfaction, that all the preliminary arrangements for holding the fair were fully matured and carried out. This society has recently purchased and enclosed about 24 acres of land lying directly on the line of the Norwalk and Danbury Railroad, and have erected the past season a building over 100 feet long by 45 broad, and fitted it up in the most approved manner for the exhibition of the various articles presented. And it was a splendid show of Domestic Manufactures of all kinds, and devices, both ornamental and useful. The long tables were filled with splended fruit and an endless display of needle work, embroidery, fancy work, interspersed with pyramids of cut flowers and bouquets, and the walls were decorated with numerous specimens of paintings and the fine arts. In the evenings the vast concourse of visitors were regaled not only by the sights and the music of the band, but from the stand, Agricultural Lectures filled up the time with interesting and instructive lessons.

Agricultural products, (together with farming implements) were shown in the big tent, and there were many good and praiseworthy articles there displayed. The number of neat stock was not as great as it should have been ; yet there were a few pairs of extra fine oxen and fat cattle, and some very superior blood stock, bulls and cows. The quality of the sheep and swine was quite good.

The show of horses was splendid indeed, and the people came *en masse* to see them, for the officers of the Society had made arrangements with the different railroad companies to run their trains to accommodate all, both as to time and rates of fare, and the facts prove that it was for their mutual benefit and was the means of vast numbers attending who would otherwise have staid at home. We apprehend that this subject of providing for easy and cheap modes of access to Fair Grounds is too often overlooked by the committee of arrangements, and visitors are compelled to pay high prices for very poor accommodations.

D. H. WILLARD,

Delegate to Fairfield County.

WINDHAM COUNTY.

Under the appointment of the State Board of Agriculture, to visit the Fairs in Windham County as their delegate,

I attended the Woodstock Agricultural Fair which was held at South Woodstock, on the 18th and 19th days of September. This is a town fair in name, but exhibitors from the adjoining towns were present, and there was a very commendable interest taken in the fair by the farmers and manufacturers in the vicinity. I had hardly expected to see so good and so general an exhibition as was found here, under the auspices of a single town.

Almost, if not all the variety usually exhibited at State and County Fairs, was here exhibited. To be sure the pre miums awarded were small but it showed the interest taken by exhibitors, and I think this was enhanced by the fact that the exhibitors were well acquainted with each other, living in the immediate vicinity of the fair, and were really holding a "Farmers' Holiday," in the large and staid old town of Woodstock, which I believe is almost exclusively an agricultural town. It would hardly be expected of me to particularize among the articles of domestic manufacture exhibited in the hall, yet I should hardly feel satisfied, should I fail to speak of a large roll of *yard wide strainer cloth*, manufactured from the Flax (so common a crop with every farmer fifty years since) by Mrs. Judith Fox, who is 83 years old. Standing in the middle ground between the present and the past; not entirely sympathizing with *all* the innovations of the present; and by no means wedded to all the slow and tedious processes of manufacturing in the past, I like when an opportunity offers, to notice the efforts of the few octogenarians, who still live to show us how the cloth for domestic purposes was manufactured in the last half century. This society had no enclosed ground for their exhibition of stock, but had temporary pens and yards upon the common for their neat stock, sheep and swine. Blood stock of the Durham, Devon, Alderney and Ayrshire varieties were presented, and although *the horses* did not seem to be the specialty of the fair, yet I noticed that the horse teams attached to the vehicles which brought the families of the farmers of Woodstock, were good substantial farm horses; such as good practical farmers would like to own.

The fair was a successful one, and it seemed to me that there is hardly a town in the state but would be profited by having at least one day in the year, set apart for a fair, and farmers' friendly greeting.

In the Windham County Transcript in which the premium list is published, I see that there are 236 separate premiums awarded; the highest of which is 10 dollars and the lowest 25 cents, which certainly speaks well for a town fair.

The annual fair of the Windham County Agricultural Society was held on their grounds at Brooklyn, on the 24th, 25th and 26th days of September.

We were present on the two last days of the fair and found the society had good grounds enclosed for their exhibition, with the necessary buildings and fixtures, with an active and live board of officers and committees; and an enthusiastic community of exhibitors. Genial skies contributed to the comfort; and their fair was eminently a success. The towns in the eastern part of the county are situated in the valley of the Quinnebaug river, and are fine agricultural towns well adapted to fruit culture, grain growing and the raising of stock, and the large number of manufactories and villages which line the river, and the railroad lying beside it, furnish a ready home market for a large amount of the smaller fruits and vegetables, which more remote farmers cannot so readily turn to good account.

From this situation I judge that the most of their surplus products goes to the cities of Boston and Providence, as the facilities for getting to either of these places is better than to any of the cities of our own state, unless it be the city of Norwich. The very large attendance present was a sufficient index of the interest taken in their fair by the whole community.

I should be glad to particularize in regard to many of the articles exhibited, but if I commence I shall much exceed my limit and must only generalize.

Most of the varieties of blood stock were well represented. Spendid town teams were on hand from Pomfret, Brooklyn, Canterbury, Hampton and Chaplin, all taking premiums in the order in which they are named, amounting to sixty-two dollars in the whole. There were about one hundred yokes of working cattle on exhibition, and taken as a whole, I think they were "hard to beat."

Butter and cheese are made to a large extent by the farmers of the county, judging by the samples on exhibition, which were splendid in appearance and entirely satisfactory to the vision; and as I passed while the committee were making their examination, I concluded from their physiognomy that they were quite as well satisfied when testing their merits by the palate.

Fruit, especially apples, was exhibited in abundance and embraced all the principal varieties, and as I stated to some friends present, would compare both in extent and variety with the great show of the "New England Agricultural Society," held at Providence two weeks before.

Domestic articles and fancy work by the ladies were on hand, but the large number of manufactories in the vicinity failed to do their share towards a fair exhibit of the industry of the county.

The fair as a whole was eminently a successful one. The premiums were large, the receipts were satisfactory, and as I learn from the President the surplus after paying their premiums will enable the society to reduce their debt about six hundred dollars.

JOHN S. YEOMANS,
Delegate to Windham County.

LITCHFIELD COUNTY.

We attended the Litchfield Co. Fair, Sept. 10th, 11th and 12th, 1867. The first day was devoted to the exhibition chiefly of neat stock, sheep, swine and poultry. Notwithstanding the unfavorable aspect of the weather in the morning, the long strings of working cattle and steers began to come in from the neighboring towns, and before ten o'clock the public square or green was filled with a splendid show of nicely matched, sleek looking animals, mostly Devons, for which this county is so justly celebrated. After remaining here a short time they were all driven to the fair grounds, situated a short distance from the center of the town. Here we found a good display of breeding animals, showing conclusively that the raising of fine stock is an important item in the farming operations of this county.

The show of sheep, swine and poultry was not as large as might be expected in this county, but we noticed some good specimens of each kind on exhibition, especially among the sheep.

The testing the strength and training of the working oxen was rather severe in some cases, and drew a large number of spectators to witness the trial.

The display of agricultural products and domestic manufactures was in a large tent near the center of the grounds, which was decorated with flags and appropriate mottoes. Here were some good specimens, but not in great abundance.

The weather on the second day was very fine, and the display of horses was every way creditable. There were some splendid pairs as well as single driving horses, and the stallions, mares and colts gave good evidence that the breeding of good horses was well understood and practiced in this county, and it is becoming a paying business, too, judging from the prices received from some of the colts recently sold.

In the afternoon the assembled crowd listened to an able and interesting address from Prof. Cyrus W. Northrop, of New Haven.

Sept. 18th and 19th, we visited (by invitation,) the First Annual Fair of the Watertown Agricultural Society.

The fair ground is surrounded with a substantial fence, and inside is a good one-half mile track. Then there are the judges stand, and many other conveniences, all fitted up for the exhibition, under the immediate supervision and at the expense of Mr. Alanson Warren, a young man of this town.

Here we found 160 pairs of working oxen and steers; 108 pairs were from this town alone, and they may challenge any other town in the county or State to produce a better team. We noticed especially a string of ten pairs, all of them the property of O. B. King, Esq., also of this town, which for size, quality and action can hardly be surpassed.

There were about fifty pairs from the neighboring towns, all together making a display that would be creditable to any county fair. We noticed also a number of herds of cattle on exhibition which showed good breeding and keeping. There were also quite a number of good fat cattle and cows. The show of sheep and swine was not large, but there were some very fine animals.

An ornamental cart, shown by W. W. Atwood, Esq., containing a great variety of agricultural products, all neatly and tastefully arranged, was much admired by all.

The display of vegetables, fruits and flowers, domestic manufactures, preserved fruits and pickles, and fancy work, the handiwork of the ladies, was made in the large tent.

The second day was devoted mostly to horses, there being a goodly number present, for exhibition and trial. First came the mares and colts, then the stallions; in this class we noticed some extra good animals. The matched horses came on next, and made a good show, as did also the single driving horses. In the afternoon the fast horses had the track, and well did they improve it.

We think the fair a decided success, and very well conducted.

D. H. WILLARD,
Delegate to Litchfield Co.

LITCHFIELD COUNTY.

Having been appointed by the State Board of Agriculture to visit some of the fairs held in Litchfield County, I proceeded accordingly to visit the Union at Falls Village, held on the 10th, 11th and 12th of September.

It is well known that in Litchfield County there are several agricultural societies, and it was unfortunate in the appointments that the county fair at the county seat, about twelve miles distant, was held at the same time, and I thought or fancied I discovered a jealousy or rival interest between them not calculated to engender kind feelings toward each other. However, the exhibition at the Union Fair in all its departments was a creditable one, and such as the farmers in that vicinity have no cause to be ashamed of.

The exhibition of neat cattle was good although not large. I noticed several very fine pairs of working oxen of different ages, and in the afternoon there was a trial of strength of working oxen in drawing or attempting to draw a stone flat loaded with 8,000 pounds of pig iron ; but not feeling much interest in seeing this useful animal put to so useless a test of his strength, I did not give that part of the exhibition any particular attention.

In the sheep department were some very fine specimens of long wool, especially a pen of Cotswolds owned by T. L. Hart, of West Cornwall.

The dairy department was remarkably good, especially the cheese, of which there were fourteen varieties, apparently of an excellent quality ; this I believe is a specialty in this section of the State.

The show of vegetables and manufactured articles was small.

The show of fruits was a creditable one, although not large, inasmuch as the fruit crop is short through the western portion of the State.

The exhibition of flowers and fancy work was small, and but few good specimens ; some very fine paintings, some bead work, and one fine case of plated ware exhibited by J. G. Perry.

It was suggested that if the society would provide more substantial buildings for the better protection and security of fruits and fancy work, it might materially increase the number and quantity on exhibition.

There were a goodly number of horses on exhibition, and some very good ones, but here as in almost all of our agricultural fairs, the horse becomes the leading animal, and more attention is paid to speed than to real worth ; the horse that can trot his mile in 2.40, although this be his only good quality, is praised and admired above the horse of all work, where in the display of his muscular powers and endurance he shows to the best advantage the nobler qualities that make him so useful to man.

The leading business of this section appears to be the dairy and sheep culture. The farms are well adapted to grazing, and the crops are all reported good without any exception.

By the same appointment I visited the Housatonic Fair, at New Milford, Oct. 3d, 4th and 5th. The weather was remarkably fine, and the fair was well patronized by exhibitors and visitors.

On entering the enclosure the first thing most prominent, and which I could not sufficiently admire, was the long trains of working cattle, from the sturdy ox of eight years old down to the steer of one year old. Here might be seen the noble Durham and by his side the fine Devon, with his sleek, glossy coat and tapering horns, at the end of which fluttered the tri-colored ribbon, looking as neat as though he were just out of a band-box. The exhibition of neat cattle does great credit to the stock growers of this vicinity. It was the best that I had seen on exhibition at any fair this season, and I very much doubt if it was excelled by many fairs in the State.

Passing from this part of the exhibition to the pens, were to be seen the cow with her calf, together with the young stock, all looking well, and as though when the present fine oxen and steers had passed away, it would not be very difficult to fill their places. In other pens were to be seen the fine Chester pigs, looking as happy as pigs can. From these we passed to the sheep pens, where we found a fine exhibition of the different varieties, naming especially the Cotswolds of S. Hartwell of Washington, and the South Downs of Mr. Flowers of Bethlehem.

Leaving the animals we passed to examine the vegetables, fruit, manufactured articles and fancy work in the large tent belonging to the county society.

The first thing we met with was the display of fruit, and in this department the same remark holds good as in other societies, viz., the unusual short crop of fruit, especially apples, but notwithstanding this there was a creditable display. I noticed about seventy plates of apples, fourteen plates of peaches, and twelve of pears.

The show of grain and vegetables was very good.

The ladies' industrial department was well remembered, but to mention each particular article with name of exhibitor would be doing more than is required of me; besides not an agricultural fair is held anywhere but what our local papers have their reporters on the ground, and a full description of the most interesting portion of the exhibition has already been given to the public, which affords to me a sufficient apology for not going into a more minute detail.

The exhibition of horses was very fine, especially of young stock. There were nine pairs of matched horses, varying in age from five to nine years, which made a very fine showing; other classes from fair to good, some good pairs of three years old, but here as elsewhere the fastest horse attracts the most attention, without taking into account any defects or want of beauty, or style of action; it is all speed; the horse that can make the best time is accorded all the praise. This is a growing evil in all of our agricultural fairs; while we pass too lightly over the useful, we are apt to place too much value on the ornamental; each has its proper place, and should have its due proportion of attention.

In looking over the awards of premiums, I thought almost every article on exhibition got a premium. This may do well in one respect, all that exhibit are pretty well assured of some premium, and thus in part, if not in whole, be compensated for any trouble they may make themselves, and it may also have a tendency to increase the amount on exhibition. But it occurred to me if more discrimination was had between truly meritorious articles and those of a more common kind, by giving larger premiums to the better class, if the more common ones were omitted entirely, it would carry out the object and design of agricultural societies, which is to promote a laudable spirit of emulation among the producers, and if possible elevate the standard of agriculture by offering suitable premiums to those who shall succeed in rearing the best animals, or producing the best crops, that others may be induced to imitate their example, and go and do likewise.

I was also appointed to visit the fair at Woodbury, but that happening at the same time of our Fairfield County Fair, my connection with that was such that I could not conveniently attend, which I hope will be a sufficient apology for an apparent neglect of duty.

All of which is respectfully submitted.

B. B. PLUMB,
Delegate to Union, Falls Village,
and Housatonic at New Milford.

MIDDLESEX COUNTY.

October 17th and 18th the Middlesex County Agricultural Society held their Cattle Show and Fair at Middletown. The first day was for the exhibition of neat cattle, sheep, swine, and poultry. We were somewhat surprised on entering the city to find the streets literally crowded with people who came in to attend the fair, and to witness the long trains of working oxen that were driven in from all quarters of the county. They were mostly attached to gaily decorated carts or wagons, with perhaps a band of music within, that played patriotic and soul-stirring music as they passed along. A cart from Durham contained thirty-six young ladies, all dressed in white, representing thirty-six States by their respective badges and mottoes. There were over 200 pairs of working cattle in these trains, and a finer display of the kind we have seldom witnessed.

After passing through the principal streets of the city, they were all arranged upon the public square for inspection and review. A number of pairs were then taken from the trains and tested thoroughly upon a loaded cart, and many of them showed good action and training, especially some of the steers of three and four years old, that moved the load backwards and forwards with as much apparent ease as some of greater age and size

Other stock was in good numbers and of excellent quality. Several herds of nice blood stock, South Down and Cotswold sheep, were there, of high price and worth.

The show of agricultural products at the hall was large and fine; apples were especially abundant. Domestic manufactures and the fine arts were all of good quality and tastefully arranged for exhibition. The Fire Department were out in their glory, with their engines, and made a fine display of their powers, and taking it all in all, it was a gala day for old Middlesex, and we think that she has redeemed her former good name for holding one of the best county fairs in the State.

The horse fair was held at Douglass Park, a short distance from the city, and was a success, both in number of visitors and the display of horses of the different classes.

D. H. WILLARD,
Delegate to Middlesex Co.

TOLLAND COUNTY.

The Tolland County Agricultural Society held their Fair at Rockville, Oct. 2d and 3d. The location for the fair was excellent, the grounds spacious, with commodious buildings for the exhibition of the products of the farm and garden, and all manufactured articles.

There was a good display of animals, embracing Ayrshires, Devons and natives, the latter predominating. In breeding, too little regard is paid to form and quality, some of the animals being rather ill-favored, particularly the oxen. Of these there was a goodly number, some fine ones, and some well trained, but hardly enough attention was paid to mating them, either in form, style or quality. I noticed occasionally a pair, one a very good ox, that had by his side one that had no business to be there, as any one could see; the good one appeared to be ashamed of his mate, (so called,) and he would get as far ahead of him as possible. Now this difficulty might be remedied by a little pains, which would pay well for the trouble.

The farmers say their land is not strong, and they cannot grow large cattle to advantage, but they can improve their cattle without. God has given us a variety of cattle as well as a variety of soil. For a county like Tolland, take your natives and cross with the Devons. It will give quality and not lessen the size, make your oxen endure more, be more active, and at present rates, bring from fifty to seventy-five dollars more per pair.

Devons were exhibited mostly by E. H. Hyde, Esq., among which were some very fine animals. Ayrshires were good, but a little under size, owing, I suppose, to short feed.

There were several very fine cows on exhibition, one or two of which were very good size, and reported to be very fine milkers. The calves of such cows should be raised.

Being unable to be present on the day of the horse show, I could not judge by personal observation, but was told by others present that there was a very good display.

The show of sheep was hardly worth mentioning; the swine were few in number, but some very good ones.

The collection of poultry was not large but very good. There were some as fine turkies and geese as I ever saw. I would give more for a pair of those turkies than for a pair of yearlings I saw on the street.

Grain was abundant, of good quality, particularly the corn and rye.

Vegetables were not numerous, but there were some very fine potatoes of the leading varieties; different kinds of onions, some large pumpkins, with a good variety of garden products.

The display of grapes was not large, but embraced good specimens of the leading varieties. I should judge that but one man raised grapes in the county.

The show of fruits, embracing apples, pears and peaches, was very good for the season. The general attendance of the members of the society manifested their interest in this fair.

There was quite a display of manufactured and miscellaneous articles. The cloths were particularly worthy of notice; the quality was good enough for any market, but I should judge that the wool they were made of did not come off the sheep which were shown at the fair.

ANDREW BARNES,
Delegate to Tolland County.

Report of Lieut. Gov. E. H. Hyde.

As I had the pleasure of visiting several of the fairs in the State, a brief report may be expected from me. My first visit was to *Windham County.* The society is in good hands, a hard working board of officers seconded by the best, wide-awake farmers in the county. All the various objects of an agricultural exhibition seem here to receive their due attention. No one is allowed to take the lead to the exclusion of others. If especial praise belongs to any department, I would specify the horticultural as manifesting both taste and skill, and a determination on the part of the farmers of Windham county to enjoy the beautiful and good gifts of nature at least as fully as any of their city cousins.

Fairfield County inaugurated their new grounds by a general turn-out. The arrangements for the entertainment of the crowds were admirable, the facilities for reaching the grounds satisfactory, both in price and comfort, and the happy crowds seemed to appreciate the attention paid to their wants. Many very fine single and matched carriage horses formed an interesting feature of the show.

The purchase and preparation of the new grounds entailed much labor upon the president, Jonathan Camp, Esq., who proved fully equal to the task.

The example of Fairfield is commended to the other societies in the State who have no fixed location, but who spend half the year in deciding where to hold a fair, and the other half in raising the means.

Hartford County fair opened its premiums to the whole State, thus securing the attendance of many fine animals from out of the county.

The old State Fair grounds on the Albany turnpike is an uninviting place, and not easy of access. The fine show of stock which was there exhibited failed to create much enthusiasm among the farmers to see it. Surely one day could be afforded to study such specimens of the various breeds of cattle as were there exhibited. While the show was so good it was easily learned from the language of those who knew the cattle of the county, that this was by no means a full representation of them—that Hartford County had not done her best.

The team of heavy working oxen from Bloomfield settled the question of the capacity of the county to carry heavy Short-horns; while the string of ten pairs of steers and working oxen belonging to Mr. King, of Watertown, showed equally well the docility, activity and beauty of the Devons.

Horticulture and the fine arts were exhibited in Music Hall. The leisure and the skill which city life allows and cultivates, and accumulating wealth encourages, presented here a rare collection of fruits and flowers. Finer pears were rarely ever seen, and other fruits were presented in a profusion always marking the exhibitions of this society.

Many thanks are due from the citizens to the efficient President, D. H. Willard, Esq., and his able assistants for giving them an opportunity to enjoy so rich a treat as this fine collection of horticultural products presented.

The *New Haven County* fair was held at Meriden. The exhibition of animals, except horses, was made in the public streets of the city, and in vacant fields adjoining. Bradley Park was used for the exhibition of horses. The horticultural department and miscellaneous articles occupied the Town Hall.

Notwithstanding all these disadvantages, they had a very good show. The most noticeable features were the fine Devon oxen, the choice breeding stocks of Short-horns and other classes, and the manufactured goods, particularly the Meriden silver-plated ware. The agricultural implements presented by various dealers and manufacturers, showed the improvement which each year is making in that line.

Much credit is due to the officers of this society for shaking off the lethargy and indifference which seemed to threaten its very existence. The success attending their labors will assure them that the farmers of New Haven County are ready and willing to support their society.

The *New London County* fair held at Norwich, enjoys the advantages of a permanent location and excellent buildings. The interest manifested in the exhibition both by exhibitors and visitors, is worthy of general imitation. The show was a good one, the various classes of stock being well represented, but after all, both here and at Norwalk, the most noticeable feature was the crowd of interested visitors. Empty grounds discourage both the managers and the exhibitors, and the attendance of all who can, of all professions and ages, is a tribute due to those who expend so much time and labor without hope of pecuniary reward, a tribute due to the cause of agriculture. Such crowds as assembled at Norwich and Norwalk add to the value of an exhibition in several ways. Not only are the managers encouraged and their coffers filled, but the exhibitors who seek more to show their products than to gain the premiums, feel satisfied with the accomplishment of their desires of showing their wares, and to them the premiums seem much more valuable when awarded at a large fair than when the grounds are vacant. The size and character of a fair is more often estimated by the number of the visitors rather than by the quality and quantity of goods presented. The burden of a fair's being a success is thus borne by all classes of the community, and cannot be shifted off on to the shoulders of the managers alone or the exhibitors. Every one is interested in the success of agriculture, and in the view we have just taken, every one shares also in the responsibility.

It cannot be expected that making so brief visits to the different fairs, I should particularize exhibitors or articles, but the general impression created on my mind was one of pride and hopefulness for the present and future industries of the State. From year to year our fairs show an improvement in the stock, not only in the individual animals but in the increased numbers of the exhibitors, and the products of the garden, the field, the work-shop and the factory are common to every household now, while the luxuries of the first half of the present century are surpassed by the every-day comforts afforded by the united efforts of industry, art and science.

E. H. HYDE.

REPORT ON THE AGRICULTURAL FAIRS IN THE STATE BY THE SECRETARY.

The first fairs of the season were held in Litchfield County, Sept. 10, 11, 12. At this time were the exhibitions of the County society at Litchfield and of the Union at Falls Village. Both these fairs were managed very much after the same model; cattle the first day; horses the second and fast horses the third.

The weather was good and both these exhibitions were satisfactory, in articles exhibited and in receipts. It was too early for a large show of fruit or agricultural products. At Litchfield there was the largest show but one of oxen and steers in the state, as also the largest show of cattle. By the report of the Secretary there was exhibited one hundred and eighty-nine yoke of the former, and of all cattle, five hundred and ninety-nine. The working oxen and steers were mostly high grade Devons, showing that the popularity of this class of stock is fully maintained. Among the breeding stock there was a fair exhibition of the other classes, but it is well settled in Litchfield County that there is nothing better for the yoke than pure or high grade Devons. I have not official returns from all the fairs, but I am satisfied that there were exhibited this year nearly one thousand yoke of oxen and steers in this county and most of them Grade Devons. If all the local societies in this county would unite in one show, we should have a display that would give some idea of the importance of this branch of husbandry.

The third day in each case was a horse trot, to which the societies gave character in exchange for the money which they received into their coffers. The rush upon the third day to witness these sports is evidence of their popularity, but in the opinion of many these societies lose as much in the attendance on the two first days as they gain on the third. These remarks are designed to apply to all so called agricultural fairs, where fast horses are made the especial attraction.

Successful exhibitions were held in Watertown, Litchfield County, and in Woodstock, Windham County, Sept. 18, 19, but I was unable to attend either of them.

I visited the fair of the Windham County Society which was held at Brooklyn, Sept. 24, 25, 26. The first day was devoted to the arrangement of articles for exhibition. The second day to cattle, and the third to horses. This society has very good enclosed grounds near the village of Brooklyn, with a substantial building for the show of the products of industry. The proximity of the grounds to the village of Brooklyn is a great convenience, making up for a lack of railroad facilities. Farmers generally prefer to attend with their own teams and to them the grounds are central and of easy access.

The display of working oxen was very good, but there were scarcely any steers. The breeding stock were mostly grades. In the different stocks of cattle I noticed a want of uniformity among them, showing little persistence in one line of breeding or even aim at any model, variety seemed to be the object. The use of pure blood bulls of some approved breed should be adopted by the farmers of Windham County. There was a good show of agricultural and horticultural products and domestic manufactures. This section of the state ranks high in the character of its dairy produce, and its reputation was fully sustained by the well loaded tables.

We cannot attribute all the success of this society in the department of horticulture to the zeal of their honored Secretary, Dea. E. Newbury, and his co-adjutors, to whom abundant credit is due, but think that someting must be attributed to the fact that the good sense of the managers and the sandy nature of the grounds has always interfered with the introduction of fast horses. Four hundred and ninety-one dishes of fruit, of choice varieties, with the accompanying floral decorations furnished proof that the gardens of Windham are cultivated as well as the farms.

The same week I attended the Fairfield County show, at Norwalk, held Sept. 24, 25, 26, 27. This society have this year purchased new and ample grounds, twenty-four acres, and erected commodious buildings. This may account in part for the crowd which was present, but we rather attribute it to the excellent custom which prevails in Fairfield County of attending their fair. The grounds are located on the line of the Norwalk and Danbury railroad. Frequent trains were run at reasonable prices, giving excellent facilities not only to the citizens of Norwalk and other towns on this route, but of the whole county to attend the exhibition. The practice also of keeping open in the evening gives all an opportunity to attend, while the music from the stand with frequent addresses, present varied and pleasing attractions for all classes. The example of the citizens of Norwalk and vicinity in their patronage of their fair is commended to other sections of the state. A fair is a perfect success only when there are things to be seen and visitors to see them; both are essential.

The number of cattle on exhibition was not large but there were many animals of superior quality. Single and matched carriage horses made a fine display, in fact the number of horses on exhibition, over two hundred, exceeded that of cattle. There were some excellent sheep, South Downs and Long Wooled. Four hundred and fifty-six dishes of fruit in an unfruitful year indicate the attention paid to this department. The long established nurseries of the Messrs. Hoyt, at New Canaan, as well as others of more recent origin have done much in disseminating not only a taste for fruit culture, but in affording facilities for its successful prosecution.

While there was a fair diplay of manufactures, it was plain that here as elsewhere the manufacturers do not as a body appreciate the advantages they might derive from these exhibitions, nor give that hearty support to the agricultural fairs which they merit at their hands.

I was unable to attend the fair at Woodbury, held the same week, Sept. 24th and 25th. This exhibition is reported as successful in all its departments.

October 1st I attended the Housatonic Fair, at New Milford.. The show continued three days but I was only present on the first or cattle day. Here as elsewhere in Litchfield County, Devon stock predominates among breeders, and consequently beautiful steers and working oxen formed a prominent feature in the show.

In sheep the prize Cotswolds of Sherman Hartwell, of Washington, alone would have made a good show for this department; but there was in addition many others, among them a prize pen of South Down ewes from the New England show at Providence. These were purchased by Mr. Flowers, of Bethlem, of Mr. Buffum, of Rhode Island, and were fit animals to grace any exhibition. The sheep is susceptible of more rapid improvement than cattle, and the different breeds show greater variation and their adaptation to different uses is more apparent. The dullest observer could not fail to notice the perfect symmetry of these well bred sheep, both long and middle wooled, and admit their superiority when compared with the leggy, scraggy specimens called sheep, which, passing for such, throw the whole race into disfavor and so much retard improvement in sheep husbandry.

There was a fair display of fruits, flowers and varieties in a large tent. Horses on the succeeding days are reported as very good, especially in the breeding classes.

Successful exhibitions which I could not visit were held in Ridgefield, Oct. 1, 2, 3; Wolcottville, Oct. 2, 3; Oxford, Oct. 1; Guilford, Oct. 2; Milford and Orange, Oct. 3.

I was present on the opening day of the Tolland County Fair, held at Rockville, Oct. 2 and 3.

There was a very good display of neat stock, as also of fruits and agricultural products. The working oxen are evidently kept for use and do not lead lives of idleness. The scarcity of steers would indicate that stock breeding is not largely practiced.

There was a beautiful display of fancy cloths from the Windermere and other mills in the vicinity. In this class of manufactures, Tolland County, with Rockville at the head may well challenge the whole country; but here as elsewhere the manufacturers as a class do not manifest proper interest in these exhibitions, forgetting their dependence upon the farmers and neglecting to do their share in making these fairs both attractive and useful. While manufactures have been the making of Tolland County farmers, the latter in return have by their unwearied toil and industry done much for the comfort and support of the factory operatives; in fact such is their mutual dependence that they will thrive or decay together.

Hartford County held its Fair Oct. 1, 2, 3, 4. The exhibition of fruit, flowers, fine arts, domestic and household manufactures, agricultural products and implements was held in Music Hall, in the city of Hartford. There was not a single show that in all its departments could be said to surpass all others, but it is safe to say that in the variety and quality of articles and in tasteful arrangement this part of the Hartford exhibition was second to no other in the state.

Of fruit there were three hundred and forty-two dishes, nearly half pears, and some of them about as fine specimens as are ever seen. The advantages of the greenhouses and culture of the city appeared in the choice fruits and fine exotic plants. Too often those who possess these luxuries withhold them from exhibition either from unwillingness to take the necessary pains or indifference. But this is not the true spirit of Horticulture ; it always delights in making its successes known, in diffusing a knowledge of its practices, in encouraging others to follow. The chief enjoyment in the possession of a rare flower or an exquisite fruit must arise from the happiness conferred upon others as participants upon your own invitation, of your success. There then is an obligation resting upon every one who is in advance to spread as far as he can the tastes and knowledge he possesses. No patent rights are needed to guard our knowledge. The more widely it is disseminated, the better cultivators shall we have in the same field, each inspiring and helping the other. Our Horticulturists must not only do their best on their own grounds, but they must show the results. It is in this way that progress has been made, and in this line is our hope for the future.

There was a fine display of agricultural implements. There is nothing which shows so decided progress as this department. We hear of the fine cattle, strong oxen, and great milkers in old times, before Devons or Durhams were known among us. Yet no one mentions mowing machines or horse rakes and all those labor saving machines as of old time, for the implements of husbandry were all of the rudest construction and only provoke a smile when a plow or a fork is discovered in some safe hiding place and brought to light to amuse the curious.

The show of stock was held at the old Fair grounds on the Albany turnpike, a place neither easy of access or attractive. We learn that some attempts have been made by the Hartford County Society to secure a more desirable location, which we hope will be successful. The display of cattle was very superior ; working oxen and breeding animals of all the leading classes. In heavy working oxen and in the excellence of the breeding stock it is hard to surpass Hartford County.

With the Ayrshires of Messrs. Wells, Pond and Collins, the Devons of Gov. Hyde, of Stafford, and the Alderneys and Short-horns of numerous breeders, there was given not only an assurance of good stock now, but high promise of improvement for the future.

The Sefton pigs of David Clark, Esq., commanded general admiration from all the judges, both from his novel way of exhibiting them, and their intrinsic merits; and his example is commended to other exhibitors. Pigs shown in the pen and on the platter, and passing both ordeals surely deserve a passing notice.

I observed the same difficulty in Hartford County as elsewhere, the crowd neglect the cattle but gather at the day of the horse show. This is a double loss. It is discouraging to the exhibitors of cattle, to incur so much trouble and not have them seen, and then much of the benefit of the fair consists in having these choice animals examined, compared and discussed by the farmers.

The horse show was a good one, and as usual attracted the chief attention. Competition for premiums was open to the whole state, which brought in many fine cattle. Mr. King's ten yoke of Devon oxen and steers and Gov. Hyde's breeding stock of Devons merited high commendation.

I was unable to attend the Fairs at Guilford and of the Pequabuck at Bristol, Oct. 9th. I hear good reports from them.

The New Haven County Fair was held at Meriden, Oct. 9 and 10. I was present on the cattle day. Working oxen were exhibited in the main street in the city, and other farm stock in vacant lots adjacent. The horse show was held in Bradley's Park, and horticultural and agricultural products, manufactures, &c., were exhibited in the Town Hall.

The show was good in all its departments. Dealers and manufacturers of agricultural implements exhibited more than the usual variety of their goods. All kinds of contrivances for all sorts of purposes could be seen. The Meriden Silver Plating Company in the splendor of their display eclipsed all other exhibitors here or elsewhere in the state. A table extending the whole length of the hall was loaded with samples of their goods. Scarce thirty years since the chemist in his laboratory was copying models by this process. Now it is an art employing thousands of hands and consuming annually tons of the precious metals, bringing these articles of utility and luxury within the means of all, presenting but another example of the gifts of science to art; of art to the comforts and luxuries of life.

The long trains of working oxen were a prominent feature of the show. In the stock yard there was much to interest, but the good breeding of the pigs from the Reform School, exhibited by Dr. Hatch, merit special mention.

Oct 15th to 18th, inclusive, closed the season with the fair of the Middlesex County Society, at Middletown. I was not present, but the reports reflect much credit upon the managers for their energy and success in securing a good display of the agricultural interests of Middlesex, and providing a holiday for the people.

Of working oxen and steers there were near two hundred and fifty yoke. Their character is too well known to need commendation.

There were some fine South Downs on exhibition, but especial mention should be made of those presented by Henry L. Stewart, Esq., of Middle Haddam. Mr. Stewart has purchased the choicest buck and ewes from the flock of the late J. C. Taylor, of Holmdel, N. J.; with these, and selections from other sources, Mr. Stewart has a flock of rare merit. Such South Downs, with the Cotswolds of Messrs. Loomis and Hartwell, must surely maintain the interest in this kind of husbandry in the State, and secure for it the attention which its importance demands.

In closing this report of the fairs in the State, I would advert in particular to the horse exhibitions. We have been watching them as they have developed, and though they are not unmixed evil and entirely to be discarded, yet as they are managed, the evil so far counteracts the good, that it becomes a serious question how far they should be encouraged, and in what way they may be improved. Under the guise of an agricultural fair we have a horse race, and the fact that it pays, and that the money is appropriated to a good use in paying the premiums of the legitimate fair, is considered to justify the operation.

Now just in proportion as these horse shows are made prominent does the interest in the other parts of the show diminish. The benefits from the exhibition of cattle, fruits and implements are in large part lost, because so few persons see them; the crowd is drawn elsewhere, and the good results of the horse show is marred by the attendant evil.

An exhibition of breeding horses, of working horses, of family horses, forms a legitimate part of an agricultural fair, but when *speed* is made the test, and large premiums are offered to draw together this class of horses, time cannot be afforded even for the proper examination of the other classes. All good citizens are called upon to avoid any partnership or compromise with anything questionable in its character or tendency. If our fairs cannot be maintained without horse-racing, they had better cease. We are already losing the better class of exhibitors and visitors, whose influence and presence cannot be counted in money, because these exhibitions are not congenial to their tastes. Now it is clearly the duty of the officers of all these associations to cherish and cultivate that which tends to elevate the masses, rather than to cater to a vicious taste that may prevail in the community. The rush to see a horst-trot does not prove that it is more useful than an exhibition of the products of the farm, the garden, and the shop, and indeed the advocates of horse-trots will hardly assert this, but they rest solely upon the plea that they pay well, that there is a crowd to witness them, and that without this addition to the treasury the regular premiums could not be paid. This argument, when fairly considered, is resolved into this: "The end justifies the means."

We hope to see the time when our agricultural fairs shall receive the countenance and support of all our best citizens; certainly the cause is worthy, and to secure this they must be purged of much dross that accumulates about them, and hinders their improvement. It is hard, we know, for the managers to resist that public sentiment which calls for thsi species of entertainment, yet as trusted with a great public interest, it becomes them to look well to it that neither their own associations suffer nor the public morals be injured by their management.

Names of the Officers of Agricultural Societies in Connecticut, for 1867.

HARTFORD COUNTY.

D. H. Willard, Newington, President.
William H. Gross, Hartford, Treasurer.
F. A. Brown, " Rec. Secretary.
D. S. Dewey, " Cor. "

NEW HAVEN COUNTY.

Andrew Barnes, East Haven, President.
Robert B. Bradley, New Haven, Treasurer.
W. Webb, New Haven, Cor. Secretary.
Charles P. Augur, Hamden, Rec. Secretary.

NEW LONDON COUNTY.

John Brewster, Ledyard, President.
F. P. Partridge, Jewett City, Treasurer.
John C. Kellogg, Norwich, Rec. Secretary.
H. L. Reed, Jewett City, Cor. Secretary.

FAIRFIELD COUNTY.

Jonathan Camp, Norwalk, President.
Joseph W. Hubbell, Norwalk, Treasurer.
Charles E. Plumb, Trumbull, Secretary.

WINDHAM COUNTY.

Ralph W. Robinson, Hampton, President.
Edwin Newbury, Brooklyn, Treasurer.
George Sanger, Canterbury, Cor. Secretary.

LITCHFIELD COUNTY.

J. Deming Perkins, Litchfield, President.
William H. Barnum, Litchfield, Treasurer.
John D. Champlin, Jr., Litchfield, Rec. Secretary.

MIDDLESEX COUNTY.

G. T. Hubbard, Middletown, President.
E. Rockwell, Middletown, Secretary and Treasurer.

TOLLAND COUNTY.

E. H. Hyde, Stafford, President.
Joseph Bishop, Tolland, Treasurer.
George H. Kingsbury, Rockville, Secretary.

UNION, (FALLS VILLAGE).

E. W. Spurr, Falls Village, President.
Daniel Brewster, " Treasurer.
C. B. Maltbie, " Cor. Secretary.
C. E. Baldwin, W. Cornwall, Rec. "

HOUSATONIC, (NEW MILFORD).

Seth Logan, Washington, President.
C. A. Todd, New Milford, Treasurer.
F. E. Starr, " " Secretary.

PEQUABUCK, (BRISTOL).

S. P. Newell, Bristol, President.
Henry Beckwith, Bristol, Secretary and Treasurer.

WOODBURY.

James Huntington, Woodbury, President.
David C. Porter, " Treasurer.
Frederick A. Walker, " Cor. Secretary.

RIDGEFIELD.

E. H. Smith, Ridgefield, President.
L. H. Bailey, " Treasurer.
D. Smith Gage, " Rec. Secretary.

MILFORD AND ORANGE.

David Mills, President.
Charles F. Smith, Treasurer.
William H. Pond, Secretary.

OXFORD.

John R. Davis, President.
John Candee, Treasurer.
M. J. Wilcoxson, Secretary.

RETURNS OF AGRICULTURAL SOCIETIES FOR 1867.

FINANCES.

SOCIETIES.	Amount rece'd from the State.	Membership and Admittance Fees.	Donations.	All other sources.	Receipts for the year.	Premiums offered.	Premiums and gratuities awarded.	Premiums and gratuities paid.	Current expenses, not including premiums and gratuities, for the year.	Disbursements for the year.	Indebtedness.	Value of real estate.	Value of personal property.
Hartford, - - -	$200.00	$1,475.00	$118.00	$22.00	$1,815.00			1,068.00	$733.48	$1,801.48			
New Haven, - -	200.00	229.00	278.00	578.84	1,285.84	1,100.00	775.00	716.00	462.90	1,178.90			
New London, - -	200.00	240.00		2,748.35	3,188.35	1,800.00		1,153.25	1,496.88	3,123.35	700.00		*2,565.00
Fairfield, - -	200.00	3,794.25	1,884.75	710.04	6,389.04		1,328.25	1,203.50	1,676.05	17,094.39	8,000 00	16,000	400.00
Windham, - - -	200.00	1,064.63	8.00	99.75	2,184.59	1,129.75	775.00	704.75	233.30	2,096.24	600.00	†7,000	
Litchfield, - -	40.00	1,257.64	515.00	319.63	2,132.27	1,468.75	1,210.37	1,145.12	904.10	2,049.22		2,000	‡‡500.00
Middlesex, - -	††	1,054.47	14.50		1,069.47		642.50	466.85	482.21	949.06			222.17
Tolland, - - -	200.00	285.05		515.10	1,000.15	587.25	520.25	520.25	340.94	861.19			737.10
Woodbury, - -		662.50		73.00	735.50	632.00		444.50	280.76	725.26	210.00		
Housatonic, (N. Milford,)	40.00	1,261.17			1,301.17	800.00	651.90	631.50	582.49	1,209.99			439.00
Ridgefield, - - -		1,438.00		494.00	1,932.00	893.15	700.85	671.35	1,237.55	1,908.00	1,000.00	2,000	500.00
Milford and Orange,		489.70		66.00	529.70	390.25	197.50	89.75	322.25	412.00			50.00

* Buildings on leased land, valued at $2,500. † In land and buildings. ‡‡ Lumber, tents and tools.

†† Application to Comptroller made too late.

NUMBER OF ANIMALS EXHIBITED.

SOCIETIES.	Bulls.	Milch Cows.	Heifers.	Calves.	Working Oxen.	Steers.	Fat Cattle.	Horses.	Sheep.	Swine.	Poultry.	All other stock.
Hartford,	5											
New Haven,	10	23	31	6	*42	20	10	56	23	25	45	†23
New London,	20	11	30	17	72	72	6	181	50	20	75	
Fairfield,	17	20	29	6	48	14	6	204	54	15	75	70
Windham,	25	56	22	8	142	14		101	154	38		
Litchfield,	15	20	30	14	180	198	13	113	27	11	26	‡129
Middlesex,	10	54		4	475	22	8	126	17	5	60	
Tolland,	5	15	3	3	110	21		33	2	8	50	
Woodbury,	17	29	22	5	84	86	10	84	37	3	33	
Housatonic, (New Milford,)	10	12	9	5	180	24	3	85	36	8	12	25
Ridgefield,	7	12	18	7	80	16	2	61	48	12	46	44
Milford and Orange,	1	4	3	2	144	6	3	17	7	3	70	

*Town teams not reported. † Mules. ‡ Stocks of cattle.

ANALYSIS OF PREMIUMS AND GRATUITIES AWARDED.

FOR FARM STOCK.

SOCIETIES.	For bulls.	For Milch Cows.	For Heifers.	For Calves.	For Working Oxen.	For Steers.	For Fat Cattle.	For Horses.	For Sheep.	For Swine.	For Poultry.	All other stock.	Total amount offered for Live Stock.	Total amount awarded for Live Stock.	Total amount paid for Live Stock.
Hartford, - -	$58.00	$104.00	$34.00	$20.00	$186.00	$18.00	$16.00	$297.00	$23.00	$9.00	$40.00		$817.00	$805.00	
New Haven, - -	50.00	46.00	26.00	8.00	78.00	22.00	45.00	197.00	22.00	28.00	25.00	$8.00	845.00	555.00	478.00
New London, - -	60.00	34.00	70.00	27.00	49.00	25.00	15.00	375.00	50.00	25.00	40.00	150.00		911.00	
Fairfield, - - -	84.00	61.00	50.00	16 00	112.00	29.00	23.00	265.00	76.00	21.00	46.00	64.00	1,469.00	847.00	756.00
Windham, - -	44.00	18.00	13.00	8.00	104.00	10.00		152.00	51,00	21.00	10.50			431.50	
Litchfield, - -	49.00	54.00	38.00	9.00	147.00	72.00	22.00	*588.00	27.00	8.00	5.50	58.00	1,246.00	1,077.50	1,044.50
Middlesex, - -	23.00	18.00	3.00	5.50	106.00	6.00	12.00	77.00	8.00	14.00	6.00		359.50	233.50	
Tolland, - - -	19.00	43.00	7.00	5.00	71.00	21.00		148.00	2.00	6.00	8.50		404.00	330.50	330.50
Woodbury, - -	28.00	27.00	15.00	6.00	75.00	39.00	14.00	106.00	15.00	4.00	5.00	24.00	510.00	320.00	320.00
Housatonic, (New Milford,)	14.00	28.00	9.00	6.00	124.00	15.00	7.00	107.00	54.00	5.00	1.25	14.00	500.00	400.00	384.00
Ridgefield, - -	27.00	15.00	10.00	8.00	109.00	20.00	6.00	151.00	42.00	15.00	18.00	53.00	559.00	474.50	474.50
Milford and Orange, -	1.00	6.00	5.00	1.50	36.00	7.50	3.00	23.00	4.00	5.00	10.25		237.00	94.75	33.00

*Of this amount $395 paid for speed.

ANALYSIS OF PREMIUMS AND GRATUITIES.—CONTINUED.

FARM PRODUCTS.

SOCIETIES.	Indian Corn.	Wheat.	Rye.	Oats.	Beans.	Grass Seed.	Barley.	Potatoes.	Carrots.	Beets.	Parsnips.	English Turnips.	Ruta Baga.	Onions.	Other Root Crops and Vegetables.
Hartford, - - -	$14.00	$10.00	$2.00	$1.00	$2.00			$22.00		$5.50				$1.50	
New Haven, - -	2.50	2.00	1.00			$2.00	$1.00	5.00	$1.00	2.00		$3.00	$1.00		$13.00
New London, - -															
Fairfield, - -	18.50	13.00	2.50	1.50		2.00	1.00	7.50	1.00	1.50	$1.50	2.00			50.00
Windham, - - -	3.75	1.00	1.00		1.50			5.75	.80	1.00		1.25		1.75	
Litchfield, - -	.50							1.50				.75		.75	6.00
Middlesex, - - -	10.90	12.75	5.00	3.50	1.50			7.00	.50		.25	.75		.50	5.00
Tolland, - -	1.50	3.00	1.00	.50	1.00		.50	5.75	.50	.50		.50		1.00	8.00
Woodbury, - -	1.25	.50	.75	.75	.75	2.50		2.00		.75		.75			10.50
Housatonic, (New Milford,)	1.50	3.00	1.00	1.50		2.50		2.00							4.00
Ridgefield, - - -	10.75	5.00	2.50	2.50	1.00	1.50		7.50	.50	.70				1.50	9.40
Milford and Orange, -	3.00	1.50	1.50	1.50				6.25	1.25	2.50		1.50	1.25		9.75

ANALYSIS OF PREMIUMS AND GRATUITIES.—CONTINUED.

FARM PRODUCTS.

SOCIETIES.	Total amount offered for grain and root crops.	Total amount awarded for grain and root crops.	Total amount paid for grain and root crops.	Sorghum.	Fruits.	Flowers.	Butter.	Cheese.	Honey and Maple Sugar.	Bread.	Total amount paid out under the head of Farm Products.	Amount awarded for agricultural implements, &c.	For mechanical inventions, domestic manufactures, &c.	No. of persons who received premiums and gratuities.	No. of Diplomas.
Hartford, - - - - -			$58.00		$119.00	$30.00	$5.00	$5.00	$3.00	$2.00	$238.00	$27.00	$85.00	152	45
New Haven, - - - -	$60.00	$33.50	26.50	$3.00	75.00	5.00	3.00	4.00	3.00	4.50	124.00	29.00	32.50	114	51
New London, - - -		27.00			*40.00		†29.00		‡8.00		104.00	26.00	72.00		
Fairfield, - - - -	275.00	105.50	105.50		163.50	126.00	10.00	6.00	5.00	7.00	317.00	14.00	86.00		45
Windham, - - - - -	34.75	18.50			75.75	27.25	15.00	15.00	3.00	9.00	181.30	7.50	149 00	214	
Litchfield, - - - -	62.50	9.50	7.00		25.50	11.00	3.00	9.00	1.00	1.00	51.00	9.50	63.37	164	
Middlesex, - - - - -	53.40	28.00	28.00		11.70		9.25	3 50		12 25	69.85	4.00	82.00		19
Tolland, - - - -	37.00	23.75	23.75		35.00	3.00	4.00	4.00	1.50	4.50	130.50	3.00	32.50	300	
Woodbury, - - - - -	39.25	24.00	24.00	.50	13.75	10.50	1.75	2.00	.50	1.00	46.50	3.00	17.00	229	
Housatonic, (New Milford,) -	25.00	19.00	18.00	.75	10.75	14.75	4.00	6.50	1.50	3.75	75.50	13.00	215.00	225	
Ridgefield, - - - -	59.20	42.85	40.00	.50	32.50	50.25	1.50	1.50	1.50	9.00	129.40	12.50	54.95	173	8
Milford and Orange, - -	36.00	30.50	17.50		24.00	3.00	3.00	6.00	1.50	4.00	36.75		18.25	37	14

*And Flowers. †And Cheese. ‡And Bread.

Names of the Towns in which the persons resided who received the Premiums and Gratuities as awarded by the Societies, and the several amounts.

HARTFORD COUNTY.

Hartford,
East Hartford,
Bloomfield,
Glastenbury,
Farmington,
Windsor,
Watertown,
Stafford,
Suffield,
Canton,
Wethersfield,
West Hartford,
Newtown,
New Britain,
East Windsor,
Granby,
Windham,
Bridgeport,
Manchester,

NEW HAVEN COUNTY.

Meriden,	$528.50	East Haven,	$17.00
New Haven,	68.00	North Haven,	8.00
Cheshire,	66.00	Branford,	8.00
Wallingford,	41.00	Wolcott,	6.00
Hamden,	32.50		

LITCHFIELD COUNTY.

Cornwall,	$26.00	Woodbury,	$55.00
Goshen,	11.00	Washington,	142.00
Torrington,	49.75	Warren,	11.37
Plymouth,	54.00	Winsted,	25.00
Litchfield,	279.25	New Britain,	150.00
Morris,	55.25	New Haven,	20.00
Bethlehem,	43.00	Washington Hollow,	50.00
Watertown,	173.50		
Total,			$1,145.12

WINDHAM COUNTY.

Providence, R. I.,
Brooklyn,
Canterbury,
Chaplin,
Hampton,
Killingly,
Pomfret,
Windham,
Scotland,
Woodstock,
Hartford,
Plainfield,

MIDDLESEX COUNTY.

Middletown,
Middlefield,
Cromwell,
Portland,
Chatham,
Durham,

TOLLAND COUNTY.

All the towns in the county.

WOODBURY UNION.

Woodbury,
Watertown,
Southbury,
Roxbury,
Washington,

RIDGEFIELD.

Ridgefield,	$310.00	Redding,	$59.25
Lewisboro, N. Y.,	46.40	Wilton,	43.75
New Canaan,	32.20	Danbury,	37.00
Courtland, N. Y.,	40.00	Newtown,	25.00
Stamford,	23.50	Westport,	16.00
Darien,	12.50	N. Salem, N. Y.,	5.00
Brewster's St.,	4.00	Banksville,	5.00
South-East,	1.00	Peekskill,	1.00
Patterson,	2.25	Poundridge,	.75
Easton,	2.00	Norwalk,	3.25
Michigan,	1.50		

MILFORD AND ORANGE.

Milford,	$70.75	Orange,	$19.00

CONCLUSION.

In concluding this report, allow me to speak of the great interest which has been manifested in our work thus far, and the cordial reception which has attended our first efforts designed to develop the agricultural resources of the State. We wish to bring the live, wide-awake, working farmers in contact with each other, that by an interchange of thought they may not only learn to be better farmers, but that they may gather new heart to overcome those obstacles incident to their vocation, and be encouraged to do more and better service for themselves and the State. The hearty commendation bestowed upon our first report, in neighboring States as well as by our own citizens, is gratifying proof to us that our labors are appreciated. Through these reports all are invited to participate in the benefits of the lectures and discussions of the Board, and the hearty approval of the course thus far adopted is not only gratifying but will enable us with more confidence to urge others to unite in making these reports what they are designed to be, a record of what we are now doing, and a stimulus to a better husbandry.

All of which is respectfnlly submitted.

T. S. GOLD.

West Cornwall, Ct., April 10, 1868.

PEDIGREES OF ANIMALS REPRESENTED IN THE REPORT.

Short-horn Cow, "BERTHA," *Roan.* Calved, March 5th, 1859.

Bred by Samuel Thorne, Thorndale, Washington Hollow, N. Y. The property of Burdett Loomis, Windsor Locks, Conn.

Got by Duke of Thorndale, 2787.
Dam, Gloster's Bloom, by imported Duke of Gloster, (11382).
g dam, Bloom, by Sir Leonard, (10827).
gr g dam, Elvira, by Æolus, (3733).
gr gr g dam, Golden Pippin, by Belvedere 2d, (3126).
gr gr gr g dam, by Alive, O! (2995).
gr gr gr gr g dam, by Eclipse, (236).
gr gr gr gr gr g dam, by Mr. Charge's Gray Bull, (872).
gr gr gr gr gr gr g dam, by the Paddock Bull, (477).
gr gr gr gr gr gr gr g dam, by Brown's Red Bull, (97).

Bertha received first prize and sweep-stake medal as a three-year-old cow at New York State Fair, in 1862, also 1st prize as a two-year-old, at Duchess Co. Fair in '61.

Short-horn Heifer, "PRIDE 2D," *Red.* Calved July 26th, 1865.

Bred by and the property of S. W. Robbins, Wethersfield, Connecticut.

Got by Prince Royal, 5102.
Dam, Pride, by Duc d' Argentine, 4703.
" Pearlette 3d, by Albion, 2482.
" Pearlette, by Benedict, (7828).
" Pearl 2d, by Senator, (8551).
" Pearl, by Homer, (2424).
" Windemere, by Emperor, (1974).
" Peeress, by Snow Drop, (2653).
" Countess, by Sir Charles, (593).
" Princess, by St. Albans, (1412).
" Blossom, by Cupid, (177).
" ——— by Simon, (590).
" ——— by Punch, (531).
" ——— by Bolingbroke, (86).

Short-horn Heifer, "CONSTANCE 5TH," *White.* Calved Nov. 18, 1864.

Bred by James O. Sheldon, Esq., Geneva, N. Y. The property of S. W. Robbins, Wethersfield, Conn.

Got by 7th Duke of Airdsie, (5532).
Dam, Constance 2d, by Duke of Airdsie, (12730).
" Constance, by Bridegroom, (11203).
" Cherry Ripe, by Sir Walter, (2639).
" Young Cherry, by Young Waterloo, (8757).
" Cherry, by Waterloo, (2816).
" Old Cherry, by Waterloo, (2816).
" ——— by Kitt, (2179).
" ——— by Kitt, (2179).
" ——— by Page's bull, (6269).
" ——— by Middleton's bull, (438).

Short-horn Cow, "TWINKLE," *Red.* Calved July 13th, 1858.

Bred by S. T. Taber, Duchess Co., N. Y. Property of B. Sumner, Woodstock, Ct.

Got by Earl of Warwick, 465, out of Aurora 2d, by East Windsor, 56.
Aurora by North American, 116, (6253).
Atlanta, by Enchanter, (3729).
Adeline, by Young Comet, (3427).
Emma, by Wellington, (683).
Annabella, by Major, (398).
Ada, by Denton, (198).
Aurora, by Comet, (155).
——— by Henry, (301).
——— by Danby, (190).

In June, 1856, on grass and two quarts meal per day, Twinkle gave from fifty to sixty lbs. of milk per day, which yielded from sixteen to sixteen and three-fourths lbs. of butter per week. The same experiment was tried in June, 1857, with the same results.

"Twinkle" was awarded the First Prize as the best cow at the New England Fair at Providence, in 1867.

Short-horn Cow, "SMILE," *Roan.* Calved, Feb. 26th, 1863.

Bred by and the property of Benj. Sumner, Woodstock, Connecticut.

Got by Fancy Boy, 2839, out of Cynthia, by Danby, 1423 1-2.
Blossom, by North Star, (4592).
Butter Cup, by Samson, (5075).
Flora, by Patriot, (2432).
Nonpariel, by Young Denton, (963). &c., &c.

"Smile" won the Second Prize in her class, at the late New England Fair, "Twinkle" taking the first.

When three years old, with her first calf, she made twelve lbs. six oz. of butter per week, on grass.

GENERAL LYON.

Bred and owned by E. H. Hyde, Stafford, Conn. Calved June 25th, 1867.

Sire, Devoni, out of Devonia (1925), bred by George Patterson, of Springfield, Maryland, by imported Herod (214).
Grandsire, Dirigo (606,) out of Rose of Baltimore, (1476 A, 1614 D).
Gr. g. sire, Exeter (198,) out of Bring-good, (550).
Gr. gr. g. sire, General (50,) out of Beauty, (21).
Gr. gr. gr. g. sire, Favorite (43,) out of Mayflower, (287).
Gr. gr. gr. gr. g. sire, Quartly's Prince of Wales (105,) out of Duchess, (146).
Gr. gr. gr. gr. gr. g. sire, Prince Albert (102,) out of Splendid, (415).
Gr. gr. gr. gr. gr. gr. g. sire, Hundred Guinea (56,) out of Curley, (92).
Gr. gr. gr. gr. gr. gr. gr. g. sire, Sillifant, (120,) out of Pretty Maid, (364).
Gr. gr. gr. gr. gr. gr. gr. gr. g. sire bred by Mr. Francis Quartly, of Molland, Devonshire, England.

Dam, Fairy 9th, (101,) winner of sweepstakes medal at Providence, R. I., Sept., 1867; also seven other prizes—by Comet A. D. H, 22, (E, 162,) imported in cow.
Grandam, Fairy 4th, (99), out of
Gr. g. dam, Fairy, (696,) imported, bred by G. Turner, Barton, Exeter, England; by Abd-ul-Medjid, full brother to Abd-el-Kader (134).
Gr. gr. g. dam, Wallflower, (472,) by Duke of York, (37).
Gr. gr. gr. g. dam, Mayflower, (290,) by son of Hundred Guinea, (56).
Gr. gr. gr. gr. g. dam, Old Mayflower.

This Bull won the first prize as the best Calf, also the Society's Medal as the best Devon Bull on exhibition, at the New England Agricultural Society's Fair at Providenle, R. I., Sept., 1867; competition open to the United States and Canadas. Also, the first prize at the Hartford County Agricultural Society's Fair—competition open to the State.

E. H. HYDE.

STAFFORD, June 9th, 1868.

"BEAUTY," (25).

Calved March 2d, 1853. Bred by E. H. Hyde, Stafford, Conn.

Sire, Albert, (2 E,) imported by S. and L. Hurlburt, Winchester, Conn.
2d sire, Baron, (6 E).

Dam, Lady Jane, 195, by Bloomfield, (372).
2d dam, imported by the Massachusetts Society for the Promotion of Agriculture, and has won the following prizes:—1st prize as a Calf at the Conn. State Agricultural Society; 1st prize at Tolland Co. Agricultural Society, as a Heifer; 1st prize as a cow at Worcester County Agricultural Society, at Worcester, Mass., and one of the cows of the best herd.

"FAIRY," 9th, (101).

Calved July 16th, 1862. The property of E. H. Hyde, Stafford, Conn.

Sire, Comet, A. D. H. 22, (E. 162,) imported in the cow Curly, (E. 610,) by Tremayne, (321 E).
2d dam, Young Curly, (E. 99,) by young Sillifant, (E. 121).
3d dam, Curly, (E. 95,) by a son of Forester, (E. 46).
4th dam, Tulip, bred by M. Merson, Brinsworthy, Devonshire.
Grandsire, Albert, (E. 2,) imported by Messrs. S. & L. Hurlburt, Winchester.

Dam, Fairy 4th, 99.
Grandam, Fairy, (A. D. H.97), (696 E,) imported, by Baron (4).

Has won the following prizes:—
1st prize as a yearling at Tolland Co. Fair; 2d as a 2 years old; 1st as a 3 yrs. old.
2d prize at New England Agricultural Fair at Springfield, as a 2 years old.
1st prize as a 4 years old at Tolland Co. Fair.
1st prize and Medal as the best Devon Cow of any age, at Providence. R. I., 1867; competition open to the United States and Canadas.
1st prize as the best Devon Cow at Hartford Co. Fair at Hartford; competition open to the State.

"ALECK CHRISTIE," calved May 12th, 1864.

Bred and owned by S. M. and D. Wells, Wethersfield, Conn.

Dam, Dolly 3d, (55,) by Robroy.
2d dam, Dolly, (53,) by Dandy 5th.
3d dam, Maggie, by Dundee 2d.
4th dam, Jennie Deans 3d, by Jock the Laird.
5th dam, Jennie Deans 1st, by Highlander.
6th dam, Meda, by Wallace.
7th, Ayr 2d, sired in Scotland.
8th, Ayr, imported by Mr. Ward, of Lenox.

Sire, John Anderson, (33,) out of Effie, imported.
2d Sire, Zachary Taylor, out of Gowan, imported.
3d Sire, Prince Albert, imported.

"FLORA, 2D," calved December 22d, 1861.

The property of S. M. and D. Wells, Wethersfield, Conn.

Dam, Flora, (74,) imported.
Sire, Eglinton, (imported,) out of Goldie.

"DOLLY, 2D," calved April 8th, 1860.

The property of S. M. and D. Wells, Wethersfield, Conn.

Sire, Rob Roy, (58,) out of Beauty, imported.
2d sire, Oswald, (51,) out of Beeth, imported.
3d sire, Oswald, imported.

Dam, Dolly, (53,) by Dandy 5th.
2d dam, Maggie, by Dundee 2d.
3d dam, Jennie Deans 3d, by Jock the Laird.
4th dam, Jennie Deans 1st, by Highlander.
5th dam, Meda, by Wallace.
4th dam, Ayr 2d, sired in Scotland.
5th dam, Ayr, imported.

Jersey Bull "ALBERT," calved July 26th, 1866.

The property of S. W. Robbins, Wethersfield, Connecticut.

Sire, Jersey, imported by W. B. Dinsmore, 1865.
Dam, Frankie, imported by " " "

Both sire and dam won First Prize at National Show on the Island Jersey, 1864.

Jersey Cow, "PANSY 6TH," calved Feb. 17th, 1862.

The property of S. W. Robbins, Wethersfield, Connecticut.

Dam, imported Pansy.
Sire, Patterson, imported in cow by R. L. Colt, Patterson, N. J.

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ERRATA.

Page 8, line 5th, read "restraining" instead of "retaining."
Page 160, line 13th, read "gain" instead of "give."

In the Report for 1866, page 108, line 19th, read "1814" instead of "1844."